DESIGN DATA - 64TH AVENUE SOUTH				
Traffic	Average Daily			
Current 2020	Pass: 395	Trucks: 15	Total: 410	
Forecast 2045	Pass: 17,250	Trucks: 350	Total: 17,600	
Clear Zone Distance: 18' (4:1)		Design Speed: 35 MPH		
Minimum Sight Dist. for Stopping: 250 FT		Bridges: HL-93		
Sight Dist. for No Passing Zone: 550 FT				
Pavement Design Life: 30 (years)				

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-IM-8-984(153)156	21564	1	1

JOB # 1
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

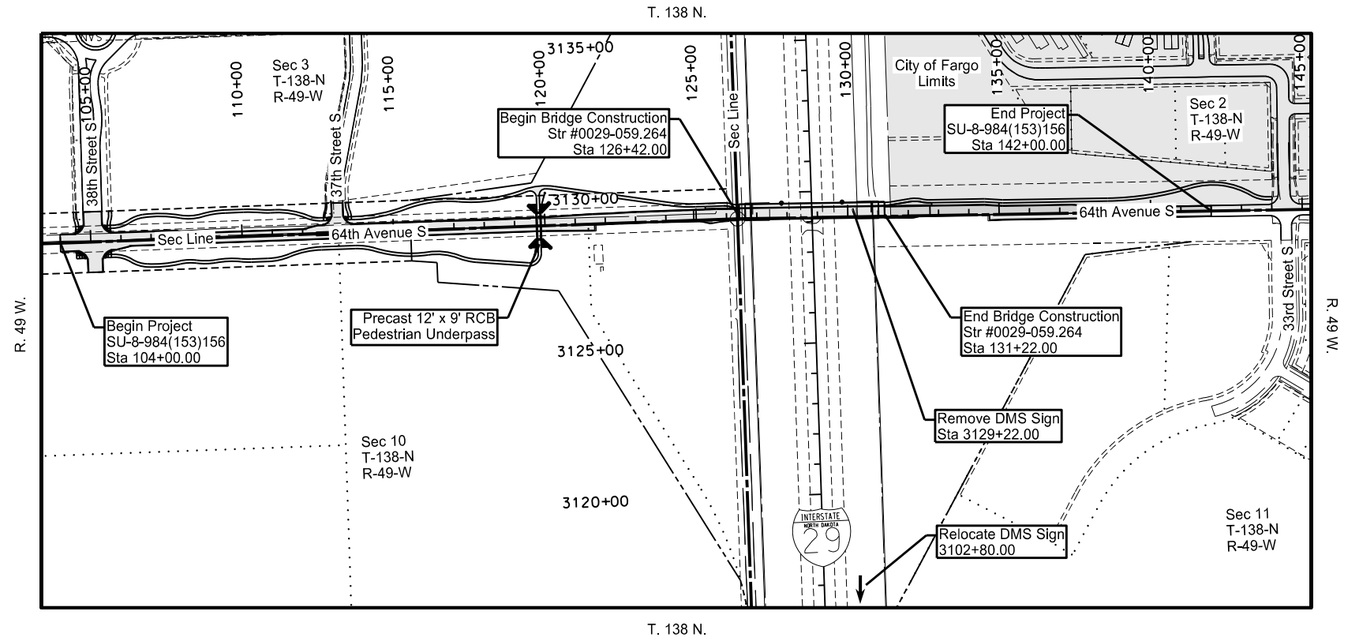
SU-IM-8-984(153)156

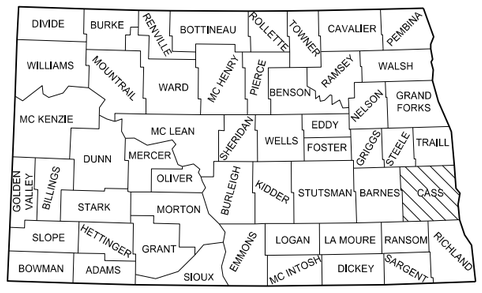
City of Fargo Improvement District BN-21-A1
Cass County
64th Ave S - 38th St S to 33rd St S

Grading, Aggregate Base, PCC Pavement, Hot Mix Asphalt Pavement, Underground Utilities, Box Culvert, Shared Use Path, Signing, Pavement Markings, Bridge, Street Lighting, Digital Message Sign

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

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SU-IM-8-984(153)156	0.720	0.720





STATE COUNTY MAP

DESIGNER
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Scott Middaugh, PE
Todd Hummel, PE
Jordan M. Gerber, PE

CITY OF FARGO

Brenda Derrig /s/ 08/31/20

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Chad Orn /s/ 09/04/20

KLJ

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	2	1

TABLE OF CONTENTS

PLAN SECTIONS

SPECIAL PROVISIONS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	2	2

TABLE OF CONTENTS

LIST OF STANDARD DRAWINGS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	4	1

Mandatory Borrow Site
(See Section 20)

Sec 3
T-138-N
R-49-W

105+00 110+00 115+00 120+00 125+00 130+00

Sec 2
T-138-N
R-49-W

I-29 SB I-29 NB I-29 Frontage Rd

City of Fargo
Project BN-20-L1

38th St S

Sanitary Sewer
Watermain
Storm Sewer

37th St S

Temp Esmt
Ppsd Esmt
64th Ave S
Sec Line

Begin Surcharge
Sta 116+90.00

Begin Wick Drain
Begin Sand Drain
Sta 119+56.00

Ppsd R/W

Begin Approach Slab
Str #0029-059.264
Sta 126+42.00

Guardrail Grading

End Wick Drain
End Sand Drain
Sta 127+40.00

Begin Project
SU-8-984(153)156
Sta 104+00.00

Watermain

Precast 12' x 9' RCB
Pedestrian Underpass
Sta 119+80.00

Surcharge Limits
Geofoam Limits
Wick Drain Limits
Sand Drain Limits

Begin 10" Commercial
Grade HMA
Sta 124+92.00

Guardrail Grading

Begin Bridge Construction
Str #0029-059.264
Sta 126+82.00

Removal of
Structure

DMS Sign Relocation
(See Inset A)

Sec 10
T-138-N
R-49-W

Sec 11
T-138-N
R-49-W

SIDEWALK CONCRETE 6IN/5IN REINF
4" AGGREGATE BASE COURSE CL 5

10 IN NON REINF CONCRETE PVMT
CL AE-DOWELED
12" AGGREGATE BASE COURSE CL 5

10" COMMERCIAL GRADE HMA
12" AGGREGATE BASE COURSE CL 5

PROPOSED LIGHT

GEOFOAM

WICK DRAIN

WICK &
SAND DRAIN

PROPOSED DMS

Maple Leaf Loop S

Sec 2
T-138-N
R-49-W

Mandatory Borrow Site
(See Section 20)

63rd Ave S

130+00 135+00 140+00 145+00

I-29 SB I-29 NB I-29 Frontage Rd

End Approach Slab
Str #0029-059.264
Sta 131+22.00

Begin Wick Drain
Begin Sand Drain
Sta 130+24.00

Guardrail Grading

End Wick Drain
End Sand Drain
Sta 138+10.67

End Surcharge
Sta 140+34.00

33rd St S

Storm Sewer

64th Ave S

Section Line

Relocate DMS Sign

DMS Sign Relocation
(See Inset A)

Ppsd R/W

Storm Sewer

End Project
SU-8-984(153)156
Sta 142+00.00

Guardrail Grading

End 10"
Commercial Grade HMA
Sta 132+72.00

Surcharge Limits
Geofoam Limits
Wick Drain Limits
Sand Drain Limits

Sec 11
T-138-N
R-49-W

End Bridge Construction
Str #0029-059.264
Sta 130+82.00

Sec 3
T-138-N
R-49-W

Inset A

Sec 2
T-138-N
R-49-W

3130+00

64th Ave S

Ppsd R/W

I-29 Frontage Rd

I-29 SB I-29 NB

Exst Interstate R/W

3120+00

3110+00

New DMS
Sign Location
Sta 3102+80.00 ~ 125' RT

Qtr Sec Line

3100+00

Sec Line

Sec 10
T-138-N
R-49-W

Sec 11
T-138-N
R-49-W

N

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64th Avenue South - 38th St S to 33rd St S

Scope of Work

64th Avenue South

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	1

NOTES

GENERAL NOTES

100-P01 COMPLETION DATES:

Interim Completion Date 1: Relocate the existing DMS sign and mirror from sta 3129+22 to 3102+80. Relocated DMS sign must function as previously prior to relocation. The DMS sign cannot be out of service for more than 2 calendar days. Permanently seed and mulch all disturbed areas at the new DMS sign location. Remove all traffic control on I-29.

Interim Completion Date 1 is May 29, 2021. Liquidated damages will be assessed at a rate of $400 for each calendar day that expires after June 1, 2021 or for any day over 2 calendar days the DMS sign is out of service.

Interim Completion Date 2: Install watermain and associated valves and fittings and perform bacteriological testing for the following runs:

- 16” watermain from sta 103+90, 60’ LT to 106+50, 60’ LT (Alignment PR64)
- 12” and 8” watermain from sta 620+45, 42’ RT to 622+40, 42’ RT (Alignment PR38)
- 8” watermain from sta 105+51, 90’ LT to 112+82, 90’ LT (Alignment PR64)
- 8” watermain from sta 622+30, 42’ RT to 622+40, 42’ RT (Alignment PR37)

Ensure that sufficient cover is placed over the watermain to prevent freezing through the winter if the final grading is not completed. If the remaining watermain is not installed until the 2022 construction season, flush the watermain that was installed as part of Interim Completion 2 prior to connecting the two water systems. Interim Completion Date 2 is July 31, 2021. Liquidated damages will be assessed at a rate of $1,000 for each calendar day that expires after July 31, 2021.

Interim Completion Date 3: All work to construct the surcharge to full height as shown in the plans along with all required geotechnical instrumentation.

Interim Completion Date 3 is October 2, 2021. Liquidated damages will be assessed at a rate of $5,000 for each calendar day that expires after October 3, 2021.

Final Completion Date: All remaining work included in the contract must be completed.

Final Completion is October 15, 2022. Liquidated damages will be assessed per Section 108.07 B for each calendar day that expires after October 15, 2022.

Liquidated Damages: Liquidated damages for failing to timely attain any completion dates are not additive and will not be imposed concurrently.

100-P02 COORDINATION OF PROJECTS: Multiple projects will be occurring in the vicinity during the 2021-2022 construction seasons. Coordinate scheduling, work activities, and construction traffic control devices between projects. The following list summarizes the projects that may occur and are subject to change:

- City of Fargo Project BN-20-L1 - 38th Street Construction
- Pond Excavation project
- 45th Street – Cass County MS2101 & City of Fargo UN-20-B1
- I-29 Grade Raise – FMD-8-029(197)049
- I-29 Bypass
- Sanford Athletic Complex

100-P03 NOISE RESTRICTIONS: No construction activities or moving of equipment can occur between the hours of 10:00 PM and 7:00 AM except for sawing of new concrete. When sawing is planned to occur during these hours, distribute written notices to residents located with ½ block of the work by 7:30 PM.

100-P04 SITE ACCESS: The project corridor must be accessed via the 38th St frontage road on the west side of I-29 and 25th Street east of I-29. After approval from the Engineer, gain permission from local jurisdictions if additional access is needed.

Upon completion of City of Fargo Project BN-21-L1 the new 38th Street can be used to access the site west of I-29.

105-110 PAVEMENT SWEEPING: Sweep paved areas that are being used by construction traffic daily and 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-P01 LOCATION OF EXISTING UTILITIES: Existing utilities have been shown to direct attention to their existence. Such utilities have been plotted from record drawings and topographic survey. The location of private utilities shown on the plans are approximate.

Be cautioned that all existing utilities may not be shown. The location of existing utilities is not guaranteed. Determining the exact location of, and protection of, the existing utilities.

Before commencing any excavation or construction determine the location and seek aid in locating all public and private utilities.

Contract and coordinate with utility owners to allow access to their own utilities to perform the relocations and/or inspections. Schedule work accordingly so as not to delay or prevent each utility from maintaining their relocation schedule.

Include all costs to perform such work in other bid items.

105-P02 EXISTING CASS RURAL WATERLINE: Prior to installing wick drains that could potentially damage the existing Cass Rural Water 1.5” waterline crossing at 125+98 verify with the contractor for City of Fargo Project BN-20-L1 that the end user of the line has been disconnected. It is anticipated that the end user will be disconnected by June 1, 2021.

Plug the existing 1.5” PVC waterline at the locations shown in the plans. Install plugs on each end of the watermain at each location identified. Use a slip or mechanical plug manufactured for PVC pipe. Include all costs associated with plugging the pipe in the unit price bid for “Plug Pipe-All Types & Sizes”.

105-P03 PEDESTRIAN UNDERPASS: The precast box culvert pedestrian underpass at sta 119+80 cannot be installed until the surcharge is removed in the 2022 construction season.

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	2

NOTES

105-P04 UNDERGROUND UTILITY CONSTRUCTION: Installation of storm sewer cannot begin prior to July 15, 2021.

If sanitary sewer and watermain are installed in the same calendar year as the paving above them, gravel backfill must be used under the roadway and 2-feet behind the back of curb and within 2' of the proposed finished surface as stated in SP 98(20) City of Fargo Standard Specifications. Include all costs to upgrade the backfill for sanitary sewer and water main in the price bid for "Backfill Class AA". If these items are installed during the previous construction season as the paving above them, gravel backfill will not be required.

107-300 CONSTRUCTION TRAFFIC ACCESS: Access areas within the right of way only at interchanges. The Engineer may allow temporary access at other locations.

To obtain temporary access, provide an access plan containing the following information:

- A traffic control plan;
- A traffic impact analysis;
- A safety analysis;
- A COA; and
- An environmental impact analysis.

To be considered for approval, the following minimum conditions must be met in the access plan:

- Construction traffic will not be allowed to cross the interstate median or lanes of traffic being used by the public at grade;
- The access plan must show that there will be methods in place, at all times, to prevent public traffic from using the access;
- A plan to restore the area disturbed by the access, including right of way fences, to pre-existing or better condition.

All work necessary to provide the access plan, comply with the plan, and to restore the area to its pre-existing condition must be completed at no additional cost to the owner.

108-100 WEEKLY PLANNING & REPORTING MEETING: A weekly planning and reporting meeting is required.

108-150 PUBLIC RELATIONS COORDINATOR: Provide a public relations and information coordinator. The coordinator cannot be the project superintendent or construction foreman. The coordinator should be knowledgeable in construction operations, be able to develop effective media releases, possess written and verbal communication skills, and be able to organize productive meetings.

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

The public relations coordinator is responsible for providing the following:

1. Organizing, scheduling, and conducting the meeting specified in Note 108-100, "Weekly Planning & Reporting Meeting".
2. Advise the Engineer, City of Fargo, and NDDOT of upcoming construction activities in regard to street closures and traffic detour routes so that city police, emergency services, schools, and other pertinent city agencies may be notified.
3. Provide news releases and necessary drawings to the media before and during construction. News releases 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.

108-P01 PROGRESS SCHEDULE: A Critical Path Method Schedule is required.

201-P01 CLEARING & GRUBBING: Remove existing brush, shrubbery, trees, and stumps/root systems within the limits as shown in the plans. Include all costs for the removals and disposals in the lump sum price bid for "Clearing & Grubbing".

202-P01 REMOVAL OF STRUCTURE: Remove the existing silo, silo foundation, and the existing concrete foundations as shown in the plans. The concrete foundations must be removed a minimum of 4' below the proposed finished grade.

An asbestos test has been completed and determined no asbestos containing materials are present. The report can be found in the Permits and Environmental Considerations Special Provision. Submit SFN 17987 "Asbestos Notification of Demolition and Renovation" to NDDEQ at least 10 working days before conducting any demolition. Include all costs to remove and dispose of the material in the lump sum price bid for "Removal of Structure".

203-385 AVERAGE HAUL: No average haul has been computed for this project.

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	3

NOTES

203-P01 SURCHARGE & GEOFOAM CONSTRUCTION: Prior to construction of the surcharge, strip all topsoil up to a maximum of 12” within the footprint of the surcharge embankment and sand drain layer. Grade the stripped surface to the lines and grades shown in the plans to accommodate the sand drain layer. Place 12” of the 18” of drainage sand prior to installing the prefabricated vertical wick drains. After completion of the wick drain installation, place the remaining 6” of the sand drain layer. All costs associated with the sand drains and wick drains will be paid by the bid items “Sand Drain” and “Prefabricated Vertical Wick Drains” respectively.

Place surcharge embankment over the top of the drainage sand in four stages. Place material in accordance with Section 203.04 E.2. Refer to Section 20 for the thickness of each stage along with the stage elevation. Once Stage 1 is completed a 14-calendar day waiting period must be observed. During the waiting period no construction equipment can be driven across the embankment and no materials can be placed on the embankment. After the 14-day waiting period, stage 2 of the surcharge can proceed. After completion of stage 2 another 14-day waiting period must be observed. Upon completion of the second 14-day waiting period, stage 3 of the surcharge can begin. After completion of stage 3 a third 14-day waiting period must be observed. Upon completion of the third 14-day waiting period, stage 4 of the surcharge can begin. Include all costs to construct the surcharge in the unit price bid for “Mandatory Borrow.”

Upon completion of the surcharge per Section 20 of the plans, a 180-day waiting period must be observed. During this waiting period the Engineer will monitor the settlement of the surcharge. After completion of the 180-day waiting period, excavate the surcharge embankment to an elevation of approximately 914.8 and place the sand cushion to an elevation of 915. Refer to note 203-P03 Clay Excavation regarding removal of the surcharge and reincorporating the material back into the project. Place geofoam as shown in Section 20 of the plans and cover with geomembrane. Upon completion of the geofoam and geomembrane installation, construct the remaining roadway embankment to the proposed subgrade elevations.

203-P02 MANDATORY BORROW: Utilize the borrow sources as shown in Section 20 for all borrow material required on the project. The Engineer will measure Mandatory Borrow by taking an initial measurement of the original ground after removing topsoil and then a second measurement after final placement of the borrow material. Provide a minimum of 48-hour notice of when the original ground is ready for measurement.

West Borrow Source

The west borrow source is a stockpile that will be located in the SE ¼ of the SW ¼ of Section 4, Township 138 North, Range 49 West. The City of Fargo will be bidding a project over the winter of 2020-2021 to excavate material and construct the stockpile. The material will be available for use on July 6, 2021. Refer to Section 20 of the plans for haul routes/access to/from the stockpile to different locations within the project corridor. It is anticipated that multiple contractors will be using this borrow source for multiple different projects in the area along with the haul route along 64th Ave from the borrow source to the realigned 38th Street. Coordinate with the contractors utilizing the borrow source and haul route for maintenance and dust control.

If borrow material is needed prior to July 6, 2021, provide material from an alternate source or coordinate with the excavation contractor to determine if material will be available sooner. After July 6, 2021 or when adequate material is available at the stockpile location, whichever is sooner, the stockpile must be utilized. Upon completion of utilizing the material, reshape the stockpile to a clean, safe condition.

East Borrow Source

The east borrow source is a clay stockpile owned by the City of Fargo. It is estimated that 40,000 CY of material is available. Upon removal of all borrow material, grade the site to a uniform surface that surface drains storm water to surrounding inlets and natural outlets using BMPs. Include all costs to grade the site in the unit price bid for “Mandatory Borrow”.

After site is graded, spread a minimum of 6” of topsoil throughout the disturbed area. If adequate topsoil is not available, utilize topsoil from other areas within the project (east and west of I-29) to provide a minimum of 6” over the entire disturbed area.

If adequate topsoil is available, strip topsoil within the delineated area and stockpile within the right of way in an area approved by the Engineer, and respread upon grading the site to as stated above. Topsoil stripping and respreading within the East Borrow Source will be paid at the contract unit price for “Topsoil Mandatory Borrow Area”.

203-P03 CLAY EXCAVATION: Upon completion of the 180-day waiting period, remove the surcharge to the elevation as shown in the plans. All removed material must be reincorporated into the project. The material must be placed in accordance with Section 203.04.E.2.b of the Standard Specifications. Include all costs associated with removing the surcharge and reincorporating the material back into the project in the unit price bid for “Clay Excavation”. This material will be quantified per Section 203.05 A of the Standard Specifications. Additional payment will not be made to move the material multiple times.

203-P04 BORROW PAYMENT: During the 2021 construction season only mandatory borrow for the construction of the surcharge from sta 116+90.9 to sta 140+33.96 and the mandatory borrow required for the relocation of the DMS sign will be measured for payment. Any borrow brought on site to be permanently incorporated into the project outside of those two work items will not be eligible for payment unless approved by the Engineer. All excavated material generated as a result of removing the surcharge must be reincorporated into the project prior to any additional mandatory borrow utilization and payment.

203-P05 PROOF ROLLING: In addition to density/moisture testing, perform a proof roll test to verify the uniformity of support and to identify unstable areas which will require correction. Perform a proof roll test on the finished subgrade located under the roadway. Complete proof rolling by using a fully loaded tandem truck. Offset each trip of the proof roller by no more than one tire width. If the grade shows no signs of pumping, cracking, or rutting, the grade being tested is considered acceptable. Correct any defective areas discovered during proof rolling and proof roll again. Include all costs associated with performing the proof roll test and any corrective work in price bid for “Mandatory Borrow”.

203-P05 CONTRACTOR FURNISHED PROCTORS: Determine the optimum moisture and density, as specified in ND T 99, for each type of earth material encountered that requires compaction control. In addition, determine the optimum moisture and density, as specified in ND T 180, for granular material to be used as pipe backfill. Perform a multi-point test using a minimum of 4 points. Submit the results to the Engineer along with a split sample of each material. The Engineer will perform comparison tests using the same procedure on the split sample. Use the Engineer’s results for determining in place density of material.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	4

NOTES

203-P06 COMPACTION AND DENSITY CONTROL: Compact earth material as specified in Section 203.04 E.2.b, ND T 99, of the Standard Specifications. Compact earth embankment material to 95% of the maximum dry with moisture content no less than optimum and no more than 4.0 percentage points above optimum.

Manipulate embankment material with disking equipment.

203-P07 BENCHING: Bench all slopes where new embankment is placed against existing slopes in accordance with 203.04 E, regardless of the steepness of the existing slope.

251-P01 SEEDING CLASS III: Seed all disturbed ground. Apply hydraulic-mulch or bonded fiber matrix after the seed is drilled in the topsoil. Use a seed mixture as follows:

Species	Pounds Live Seed/Acre
Perennial Ryegrass	88
Creeping Red Fescue	66
Annual Ryegrass	33
Kentucky Bluegrass	33

Use fertilizer mixture of 12-24-12 applied at a rate of 220 pounds per acre. Water until grass is established as determined by the Engineer. Include all costs for seeding, fertilizing, and watering in the unit price bid for “Seeding Class III”.

261-P01 PERMANENT FIBER ROLLS: If fiber rolls are to remain on the project, use fiber rolls that are composed of netting that meets either of the following:

- Plastic or natural fiber photodegradable netting that has a life expectancy between 12 to 24 months. If the photodegradable netting is plastic, the netting color must be either clear or green.
- 100 percent biodegradable jute netting that has a life expectancy between 6 to 12 months.

302-110 BASE COURSE: Trim base course as specified in Section 302.04 C.1, “Surface Tolerance Type B”.

430-100 HMA LONGITUDINAL JOINTS: Construct the joints within the final lift of pavement as detailed within this note.

Place a longitudinal joint at the centerline of the roadway.

Construct each lane and the adjoining shoulder using a single pass or a hot seam.

A hot seam is defined as follows:

- Construct using two pavers in echelon formation simultaneously.
- No more than 300 feet between pavers; and
- Roll the seam between paver passes in a manner such that the seam is not visible.

430-P01 CONTRACTOR CORING: Before placing bituminous material into core holes, apply a tack coat on all sides of the core holes as specified in Section 401.

550-P01 CONCRETE PAVEMENT: Pour curb and gutter separately from adjacent concrete pavement.

550-P02 CONCRETE PAVEMENT RIDE QUALITY: The Engineer will determine the pavement smoothness by profiling the finished surface of the mainline pavement. The Engineer will not profile:

1. Bridge decks;
2. Side roads and approaches;
3. Shoulders, ramps and gore areas;
4. The beginning and end of the project;
5. Where utility appurtenances are placed in the wheel paths of the lanes;
6. Finished surfaces 20 feet before and after the excluded areas shown in 1, 4, 5, and 6; and
7. Where safety and the roadway geometrics do not allow the proper operating speed for the profiler to collect data. The Engineer will determine the location of these areas.

The Engineer will not test the roadway between November 30 and May 15. The Engineer will not test when the ambient temperature is below 32°F, or while it is raining or under inclement weather conditions. The Engineer will test when the pavement is dry and at an agreed upon time between the Engineer and the Contractor.

Prepare the surface for profile collection by sweeping and other method needed to ensure a clean surface for accurate testing.

Schedule a time for the profile to be collected. The Engineer will collect the profile within 5 working days after the agreed upon time.

The Engineer will apply a liquidated damage of $1,500 per trip for each profile collected after the second profile.

The Engineer will use an inertial profiler to collect the profile in each wheel path of each lane.

The Engineer will trace the profile at approximately 31 and 97 inches, measured from the left edge of the lane, as determined by the direction of traffic. Provide traffic control for 500 feet beyond the ends of the project to facilitate the collection of profile data.

Complete corrective action within 21 calendar days of final profile data collection and no later than the final completion date.

The Engineer will collect the final profile when the entire mainline paving is completed. The Engineer will collect the acceptance profile in both wheel paths at the same time. The Engineer will create 1 profile for each lane.

The Engineer will:

- Measure the smoothness of the roadway using the International Roughness Index (IRI) to the nearest 0.1 inch;
- Use ProVal, http://www.roadprofile.com, to calculate the IRI for the Pavement Profile (PPF);
- Provide a copy of the PPF file upon completion of the data collection.
- Apply a 250 mm filter to generate the IRI in ProVal;

NOTES

- Average the IRI of the two wheel paths to calculate the Mean Ride Index (MRI); and
- Use the MRI option in ProVal for evaluation.

Download the current version of ProVal at http://www.roadprofile.com

Identify areas of localized roughness using the Smoothness Assurance Module (SAM) within the current version of ProVal.

Use the following settings in the SAM:

- Ride Quality Index set to MRI.
- The base length:
  - Short continuous - 25 feet
  - Long continuous - 528 feet
  - Fixed interval - 528 feet
- Ride Quality Threshold of 140 in/mile

Apply a 250 mm filter to the file being analyzed.

Submit a detailed corrective action plan using the ProVal and SAM data, three working days in advance of grinding, Generate grinding simulations in ProVal with multiple grinding depths, varying equipment, and multiple pass patterns Include the grinding simulations with the corrective action plan. The Engineer will provide another profile PPF file. Submit a new corrective action plan after being provided the subsequent profile PPF File. The Engineer will determine if further corrective action will be completed based on the new corrective action plan.

Use diamond grinding equipment to correct high spots of more than 1/4 inch and less than 5/8 inch in 10 feet, meet a 100 in/mi or less MRI threshold, and ensure that no more than 10 percent of the MRI is above 140 in/mi and no more than 5 percent is above 155 in/mile. Ensure the deviation after grinding is less than 1/4 inch. If the deviation exceeds 5/8 inch high or low, submit a corrective action plan that includes either grinding or removal and replacement of the pavement. If the corrective action plans contains grinding, the pavement must be ground to within the 1/4 inch tolerance. The Engineer will determine if corrective action will be implemented based on the corrective action plan. If the corrective action plan is approved and consists of grinding, the Engineer will direct the Contractor to obtain cores in these areas, as specified in Section 550.04 N.1, “Contractor Coring”, and will make a determination of the pavement thickness as specified in Section 550.04 N.2, “Determination of Pavement Thickness”.

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

704-200 PRECAST CONCRETE MEDIAN BARRIERS – STATE FURNISHED: Obtain 40 barriers (10’ x 2.5’ units) in Year 2021 and 252 barriers (10’ x 2.5’ units) in Year 2022, from the NDDOT Maintenance Yard located in Casselton. Return the barriers to the same location upon completion of the project. The address for the Casselton Maintenance Yard is 15482 37th Street SE, Casselton, ND 58012.

Install any missing markers on the barriers before traffic use. Include the cost of the markers in the contract unit price for "Precast Concrete Median Barrier – State Furnished". Some 4 inch x 4 inch boards are available at the return location. Provide any additional 4 inch x 4 inch boards necessary to stack barriers. The boards will become property of the Department. Include the cost for boards in the contract unit price for "Precast Concrete Median Barrier - State Furnished".

704-P01 TRAFFIC CONTROL PHASING: Refer to Section 100 for traffic control layouts and layouts for the construction phasing. Utilize a 55 MPH speed limit within the workzone on I-29 when shoulder closures are in place.

2021 Traffic Control

- Provide northbound I-29 shoulder closure for the grading and installation of the relocated digital message sign.

2022 Traffic Control

- Provide northbound and southbound I-29 shoulder closures (inside and outside shoulders) for the construction of the bridge.
- Interstate can be closed a maximum of 8 nights during construction of the overpass structure. It is anticipated that closures will be required for setting beams, installing the roadway canopy, and removing the roadway canopy. Refer to the detour and traffic control layouts in Section 100 to be used during the closures. The closures can only take place between the hours of 9:00 PM and 5:00 AM. Notify the Engineer in writing 14 calendar days prior to implementing the closure. Northbound and southbound closures cannot occur concurrently.

704-P02 PORTABLE CHANGEABLE MESSAGE SIGN: Install Portable Changeable Message Signs (PCMS) 7 calendar days before any traffic control installed on I-29. The Engineer will determine the locations for PCMS installation. Once the PCMS(s) are installed, they will remain in place for the duration of the construction season or when all traffic control has been removed, whichever is sooner. 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. The PCMS will be measured for payment per device installed per construction season.

704-P03 TRAFFIC CONTROL DEVICES: The traffic control devices list for the project has been developed using traffic control sign layouts (shown in Section 100) and Standard Drawings as listed below:

- D-704-24 Type HH – Shoulder Closure for DMS Sign in 2021
- D-704-58 – Shoulder Closures for Bridge Construction in 2022

Traffic control devices will be measured for payment per device installed per construction season.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	6

NOTES

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

- Minimum total area of 800 square feet
- Indoor bathroom facilities with weekly cleaning services
- Hookups for heat, electricity, sewer, and potable water
- Minimum cabinet space of 32 cubic feet
- Minimum counter space of 60 square feet
- Minimum of 4 office chairs
- A heating and cooling system that is capable of maintaining the temperature between 65°F and 78°F
- Lighting with a minimum of 110 foot-candles
- Photocopy/Printer with scanning capabilities capable of 11x17 photocopies and toner to last the duration of the project. Other features to include digital copying and scanning. Provide a copier/printer machine with operating software compatible with that used by the NDDOT.
- Supply a photocopier with enough toner to last the length of the project and with the following capabilities:
  - Printing;
  - Scanning; and
  - Producing 11 x 17 photocopies and prints.

Place the field office on the project, or as close to the project as possible. The Contractor is responsible for the pay for the following:

- Rental fees
- Cleaning service
- Heating
- Electrical
- High speed internet service
- Sewer
- Potable water

Make the field office available for occupancy one week before the start of the 2022 construction season and remain through project completion. The Engineer will approve the location and the condition of the office.

The Engineer is responsible for the following items:

- Supplying paper

All requirements of the Field Office are subject to approval by the Engineer. Include the costs for the field office in the bid item "Field Office".

Schedule for Payments:

- 25% when set up on site.
- 50% on July 15, 2022
- 75% at the final completion date
- 100% when the project is complete

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	7

NOTES

714-P01 STORM DRAIN: All quantities shown for storm drain are quantified to the center of structure. Payment will be based on Section 714.05 A of the Standard Specifications.

714-P02 RCP STORM DRAIN: Provide 18-inch reinforced concrete Class V pipe in the price for “Pipe Conc Reinf 18in Cl IV-Storm Drain”.

714-P03 PIPE COUNDUIT 12IN-STORM DRAIN: 12-inch storm drain outlets located at Structure 61A and 150A to be fully restrained from the inlet to the flared end section at the toe of the embankment. Pipe and joint restraints to consist of one of the following:

1. Integral pipe restraint PVC SDR 26 Certa-Flo
2. Fusible PVC SDR 26
3. PVC SDR 26 with external restraint harness by EBAA Iron or Sigma
4. Approved equal

Vertical bends indicated on the plans to consist of PVC SDR 26 fittings. Restrain PVC fittings to pipe with Mega Lug by EBAA Iron or One-Lok by Sigma. Outfall to include corrugated steel pipe end sections attached to PVC pipe. Restrain pipe to inlet with stainless steel anchor bolts tied to the first fitting.

Include excavation, bedding, bends, fittings, restraints, pipe, end section, trash rack, and backfill in the price bid for “Pipe Conduit 12In-Storm Drain”.

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

722-P01 ADJUSTING RINGS: Height adjustment of manholes and inlets outside the paving section to be performed using engineered polymer rings.

Height adjustment of manholes and inlets within the paving section to be performed using either engineered polymer rings or precast reinforced concrete rings.

When using precast reinforced concrete rings, the rings to be free from cracks, voids, and other defects. Interior I/I Barrier, manufactured by Strike Products or approved equal, to be used when height adjustment is performed utilizing round precast reinforced concrete rings. Seal the casting and between each ring with a minimum 1/2" x 1/2" double bead of butyl rubber sealant in caulking form. Preformed butyl tape is not allowed. Wrap precast reinforced concrete rings with nonwoven geotextile fabric, secured around the outside of the rings from three (3) inches below the top of the manhole/inlet structure to the top of the rings. When minor shimming is required, fill voids with concrete. Place a four (4) inch wide concrete encasement around all precast reinforced concrete rings, around the outside of the rings from three (3) inches below the top of the structure to the frame casting.

Height adjustment of manholes and inlets is limited to a maximum of 12" of adjustment and no more than 4 adjusting rings. Use taller rings where required to limit adjustment to 4 adjusting rings. Replace all structures requiring adjustment over 12”, when caused by the negligence of the Contractor.

Include all adjustments to the proposed structures in the cost for each structure.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	8

NOTES

748-P01 CURB & GUTTER – TYPE I 30IN: Install ¾” expansion at locations where concrete abuts the back of the curb and gutter. Seal all expansion joints with hot pour sealant to produce a slightly concave surface. Include all costs to install and seal the expansion joints in the unit price bid for “Curb & Gutter – Type I 30IN”.

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.

1. Number 366 Natural Red, produced by Soloman Colors, Inc. http://www.solomoncolors.com/;
2. Brick Red pigment Number 160, produced by Davis Colors http:/www.daviscolors.com/; or
3. 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.

Follow the reinforcing requirements for Sidewalk Concrete 5IN Reinf on all pigmented imprinted concrete. Do not apply imprint to concrete at aprons of the pedestrian underpass adjacent to the shared use path.

750-P02 SIDEWALK CONCRETE 5IN REINF: Reinforce sidewalk as shown in Section 20 of the plans. Place ½” expansion joints at intervals not to exceed 150’. Seal all expansion joints with hot pout sealant to produce a slightly concave surface.

Saw all longitudinal and transverse joints. Saw a centerline joint on any sidewalk greater than 8’ wide.

Include all costs to saw and install and seal the expansion joints in the unit price bid for “Sidewalk Concrete 5IN Reinf”.

750-P03 DETECTABLE WARNING PANELS: Install unpainted cast iron plates manufactured by EJ Iron Works, Neenah Foundry, or approved equal. Tuftile is not an approved equal for radial domes.

750-P04 ADA LANDINGS: Place concrete landings as shown in Section 20 separately and prior to adjacent ADA ramps or sidewalk. Allow a minimum of 24 hour of cure time on the landings prior to placing adjacent concrete.

752-P01 FENCE CHAIN LINK REMOVE AND RESET: Remove and reset the chain link fence installed during the winter suspension as the permanent access control fence. Measurement will be based off the quantity of chain link fence removed. It is estimated that 672 LF of chain link fence will be required for permanent access control. Stockpile excess fence material at locations designated by the Engineer within the project limits.

754-P01 REVISE DYNAMIC MESSAGE SIGN: Relocate the existing dynamic message sign as shown in the plans by the interim completion date. Notify NDDOT Fargo District 48 hours prior to taking the sign out of service. All earthwork for at the proposed relocation site will be paid by the bid items “Mandatory Borrow” and “Topsoil”.

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	9

NOTES

SECTION 140

770-P01 RIGID CONDUIT: Provide 1.5” Schedule 40 HDPE conduit that is listed to meet NEC requirements, is integrally colored RED, has smooth controlled outside diameter at 1.900”, a minimum wall thickness of 0.145”, and has a minimum inside diameter of 1.579” and color RED

Innerduct will be required as shown on plans and will be connected to stubbed out 1.5” conduit at all concrete base and feed point locations. Boring is the required method of installation in all established areas that are to remain undisturbed by roadway construction. Install innerduct at a minimum depth of 24” below finished grade. Place innerduct/conduit in line with bases behind curb unless approved from the Engineer to adjust placement. Duct seal all innerduct/conduit entering or exiting foundations, feed points, and pull boxes.

770-P02 CONDUCTOR: All conductors to be continuously color coded (black, red and green). The conductor between standards are to be triplex, 3-#6 USE. All wiring within standards between distribution conductors and luminaires to be #12 AWG standard copper, 600-VOLT, type RHW. All luminaires to be grounded.

Conductor connections in street light bases to be Panduit, clear insulated aluminum connector *PCSB4 or Burndy equal. In pull boxes, Tyco Electronics GelCap SL splice cover kit with connector. All other conductor splices to be, UL listed, with PowerGel sealant type connections meeting all codes for desired application.

770-P03 FUSE HOLDERS: Provide fuse holders with 3” of heat shrink at conductor connections. To be a type FNM 10 amp fuse with a Bussmann type HEB-AA or a Littlefuse type LEB-AAK, in line fuse holder. Heat Shrink to be: 3M ITCSN 0400 12-6AWG 600V or approved equal

770-P04 ANTI-SEIZE: Provide Anti-seize material to all threaded bolts and screws.

770-P05 CONCRETE FOUNDATION – FEED POINT: Install the top of concrete foundation level and at an elevation to prevent flood damage of cabinet. Duct seal conduits that contain wire. Provide two spare 1.5” conduit sweeps in the foundation. Cap spare conduits with an oil-tight plug with wing nut and label them as to which direction each spare sweep faces. Verify foundation and conduit sweeps do not conflict with underground utilities prior to installation.

770-P06 FEED POINT: Furnish and install a new pad mounted feed point cabinet for Feed Point A shown on the plans. Refer to the plans for additional requirements.

Coordinate with the electric utility (Cass County Electric Cooperative – Phil Windjue 701-356-4481) for providing a new electrical service (1-phase, 120/240V) for the new feed point cabinet. Coordinate the installation of new service conductors and conduit between the feed point and utility transformer. Verify the feed point location and elevation with the Engineer and Cass County Electric before installation. The contractor is responsible for all coordination and costs involved with getting power to the feed point and the cost will be incidental to the price bid for the feed point. Contact utility for exact fee amounts.

Provide 2” PVC conduit for the service conductors between the isolated service compartment of the cabinet to the utility transformer. Utility will provide the service cable between the utility transformer and the metersocket. Contractor to provide continuous conduit, at 24” below grade, between the utility transformer and the metersocket. Install two ground rods that are spaced 6’ to 7’ apart.

Feed point cabinet assembly to be pad-mounted type, prefabricated UL 508 listed, stainless steel, service entrance rated, five contactor controlled 240V lighting circuits, with 1 metersocket, and meet the requirements shown in the detail. Cabinet will include a padlockable lift-off service panel along with a factory installed, interior mounted meter socket which meets the requirements of the local utility. Metersocket to have a lever bypass. Provide a viewing window for the meter. Meter to be provided by the utility company. Provide a separate compartment in the cabinet for the unfused service conductors that is isolated from other non-service equipment per NEC and authority having jurisdiction (AHJ).

Provide a feed point cabinet with non-corroding hardware. Provide cabinet with a 3-point latch pad-lockable handle. Cabinet to be weatherproof NEMA 3R rated and provided with a lock drip shield. Provide cabinet with steel back panel with 1/2” spacer behind the panel. This back panel to be factory painted white. Padlock for the non-utility part of the cabinet to be obtained from the City of Fargo Engineering Department. Ensure utility provides a lock for the utility service side of the cabinet or obtain a lock from the city, under no circumstances will the service side of the cabinet be unlocked when the service is energized. Prefabricated feed point enclosure to be assembled by States Electric, or approved equivalent.

Install a lightning protection device on the feed point incoming lines to prevent lightning surges entering through the wiring from damaging electrical wiring and electronic equipment. Provide a protector that is a sturdy, weatherproof, service-proven device that immediately drains lightning surges harmlessly to ground. Install the protector in the feed point that will discharge a surge in a fraction of a second. The protector will perform this protective function over and over again, without any maintenance required; possessing the same long-life, value-type characteristics obtained in higher voltage distribution arrestors. The protector is to be a two-pole device designed for single-phase 120/240 volt three-wire grounded neutral service. Capabilities of the protector to include:

i. Limiting the surge voltage to 3 kV peak, while;
ii. Conducting surge currents of at least 10 kA with an 8 by 20 microseconds (time to crest by time to second half-crest) waveform; and recovering to its former state after the surge is over with AC power supplied. The manufacturer of the AC suppressor is to certify that the suppressor meets ANSI C 621.1/IEEE, Standard 28, paragraphs 7.1 and 7.6. The suppressor peak voltage is not to exceed 3kV when tested according to paragraphs 7.3 and 7.5 of the ANSI/IEEE Specification. The AC line surge protector is to be installed on the load side of the circuit breaker. If the protector should fail and short the circuit, the circuit breaker will open up to give maximum protection. The AC neutral is to have the same protection as the AC load. The arrestor leads are to be kept as short as possible. Grounds are to be made directly to the cabinet ground bar. An acceptable arrangement is shown on the plans.

Provide permanent, typed, etched labeling for contactors, breakers, and control switch. Provide gasketed doors. Duct seal all conduit, provide caps over spare conduit. Face the photocell north. Exposed conduit is not permitted, install conduit within the concrete foundation.

Include in the price bid for Lighting System all materials, labor, and coordination required to install the service and to furnish and install the feed point. Also include the concrete foundation, grounding equipment, surge protector, service conduit, service equipment, and utility costs. The feed point will be measured as a complete unit installed and operational.

NOTES

770-P07 CONCRETE FOUNDATION-HIGHWAY LIGHTING: Verify bolt circle and projection with the light standard manufacturer specifications.

Once the concrete base is poured and set, maintain at all times a cover (such as a traffic barrel, cone or similar item) over the top of the base until the street light has been installed to protect the anchor bolts, ground rod, conduit, and exposed conductor. Include cost to provide these covers in the unit price for “Lighting System – A”

Use Hydro-vac excavation for concrete bases where standard auger method is not possible. Verify base locations in the field after locates with the Engineer. Method of base excavation is incidental to bid.

770-P08 LIGHT STANDARD 40FT MT HT (NO MAST ARM): Provide stainless steel light standards that have a 40’ mounting height, no mast arm, frost finish, and breakaway “H” base, by Millerbernd. Provide stainless steel 2” pipe tenon horizontal adapter with a frost finish and 12” arm. Include all costs associated with light standards in the bid price for “Lighting System A”.

770-P09 ORNAMENTAL LIGHT STANDARD: Provide light standard that comes with the LED LUMINAIRE – TYPE B (140 WATT). The catalog number for the LED Luminaire – TYPE B contains the information for ordering the light standard.

770-P10 LED LUMINAIRE – TYPE A (210 WATT): Provide the luminaire below:
Leotek, GC2 G-Series, 209W LED, 700mA Drive Current, 26,700 Lumens, Multi-volt 120-277V, Type 3R distribution, 4000K, Grey, No Photocontrol Receptacle
Catalog No: GC2-96G-MV-NW-3R-GY-700-FFA-SC.

Or approved equal: AEL Autobahn ATBL or Phillips RoadFocus RFL Series (minimum of 26,500 Lumens). Equivalent manufacturers must submit an exact electronic “.ies” file for review.

770-P11 LED LUMINAIRE – TYPE B (140 WATT): Provide the luminaire below:
Lumec by Signify, Solecity, 138W LED, 350mA Drive Current, 17,690 Lumens, 240V, Type 3 distribution, 4000K, Color BKTX, No Photocontrol Receptacle
Catalog No: ULM100-145W128LED4K-G2-LE3-240-CDMGP-PHB-UBM100-1A-UPM100-22-BXTX

770-P12 UNDERPASS LIGHT UNIT CEILING MTD – 50 WATT: Furnish and install pedestrian underpass luminaires as shown in plan. Use the luminaire listed below or approved equal. Approved equal luminaires must be rated vandal resistant with a minimum polycarbonate lens thickness of 0.375”, and has the ability to be ceiling mounted with the power source coming in the side. The manufacturer of the product listed below has indicated they can modify the luminaire listed below to meet these requirements.

Luminaire Manufacturer	Catalog Number
Kenall	SDA-4-0/0-1-45L40K-DCC-DV-2/9-1-WL

770-P13 PULL BOX: Furnish and install a PVC Pull Box with metal frame and cover with dimensions of 24” dia x 36” deep. Install 24” of pea rock for drainage below the pull box and extend 6” beyond the outside edge of the pull box. Flush mount the top of the pull box in concrete areas and level with final grade and sloped to match in areas of topsoil. Provide enough slack to pull conductor and splices a minimum of 4 feet above finished grade.

Include covers for pull boxes for future fiber with “Communications” or “Fiber Optic” logo stamped.

Include all costs associated with pull boxes in the bid price for “Lighting System A”.

772-P01 2IN DIAMETER RIGID CONDUIT: Install the 2” future fiber conduit 24 inches below finished grade. Conduit is to be ORANGE HDPE conduit meeting the requirements of Section 896.01.B.2 of the Standard Specifications. Do not install HDPE conduit when either the conduit temperature or ambient temperature is below -10 F. Backfill all trenched or backhoed areas under sidewalks or roads with Class 3 gravel compacted to 90% of ND T 180. Include an ORANGE No. 12 Copper Clad Tracer Wire with HDPE insulation, rated at a minimum 250 pound breaking load, running the full length.

SECTION 160

754-P01 EMBANKMENT, SEEDING & MULCHING: Seed the entire area disturbed from trenching and embankment construction. Quantities for seeding and mulching for the DMS sign relocation have been included in the plans.

754-P02 DYNAMIC MESSAGE SIGN STRUCTURE: Post mount on a butterfly support with a concrete foundation the existing sign and supporting structure.

Install the supporting structure with the vertical and horizontal dimensions to the roadway as shown in the plans.

The existing DMS sign weighs approximately 5200 pounds. The existing pole shaft weighs approximately 1726 pounds.

754-P03 REVISE DYNAMIC MESSAGE SIGN COMMUNICATIONS: A single-mode fiber optic cable will be the communications link between the DMS Sign Controller and the DMS network connection located in the Fargo District office. The DMS Sign Controller will connect to the state network as an Ethernet device using a 19” rack mounted optical Ethernet transceiver located at the Fargo District. Move the existing IT Pullbox at Sta 3129+27 ~137’ Rt to Sta 3132+00 ~ 143’ Rt (Pullbox 4). Coil extra fiber in reset pull box. A 36 fiber optic cable shall be installed from the reset IT Pullbox at Sta 3132+00 –143’ Rt to proposed Pullbox 1 at Sta 3102+98 ~ 136’ Rt. Fusion splice the fibers as directed in notes on Section 160 Sheet 3. Fusion splice the 6 fiber breaked out cable t Pullbox 1 (Sta 3102+98 ~ 136’ Rt) with a splice enclosure. Terminate the 6 fiber breakout cable inside the DMS controller cabinet using a 6 count Fiber Distribution Panel using ST connectors. Label the terminals.. Include all costs to furnish fiber optic communications to the sign, including cable and conduit, 6 fiber breakout cable, splice connections, 6 fiber patch panel, fiber optic jumpers, and optical Ethernet transceivers as described above and as shown on the plans, in the bid price for “Revise Dynamic Message Sign”

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	11

NOTES

772-P01 DYNAMIC MESSAGE SIGN RODENT PROTECTION: Follow all provisions for rodent protection as found in Section 772.04 G.5 of the Standard Specifications.

772-P02 STEEL CONDUIT - DYNAMIC MESSAGE SIGN: Use steel conduit when the conduit is either above ground or installed less than 18” below proposed finished grade.

772-P03 DYNAMIC MESSAGE SIGN CONTROLLER FOUNDATION: Construct the controller cabinet foundations according to standard drawing D-770-1 “Controller Cabinet Foundation Pad Mount Detail.” Construct the working slab according to the D-770-1 “Working Area Slab” detail. Include all work necessary to construct cabinets, including concrete foundations and working slabs, in the bid price for “REVISE DYNAMIC MESSAGE SIGN”

772-P04 RESET EXISTING FEED POINT: Remove the existing pad-mounted Feed Point – Type 1 (NB I-94 Sta. 3129+27~137’ Rt) and reset it at Sta 3102+98 ~144’Rt.

Include all work necessary to remove and reset the existing feed point, and connect the DMS to the reset feed point in the price bid for “REVISE DYNAMIC MESSAGE SIGN”

772-P05 RIGID CONDUIT AND CONDUCTOR: Cass County Electric has agreed to install the Mult 3 No 2 USE conductor and conduit from their overhead power line west of I-29 to the proposed feed point location. The contact person with Cass Country Electric is currently Phil Windjue, phone number (701) 356-4481, but this is subject to change prior to project construction. Coordinate with Cass County Electric to get power to the sign.

772-P06 DYNAMIC MESSAGE SIGN FEED POINT: Construct the concrete foundation for the feed point according to the “Pipe Stand Mounted Feed Point” detail found in Standard Drawing D-770-2. Provide and provide and bear all costs for the electrical service necessary to operate and maintain the DMS system until the site is accepted by the Engineer. Include all work necessary to construct the feed point cabinets, including concrete foundations, in the bid price for “REVISE DYNAMIC MESSAGE SIGN.”

772-P07 RESET SURVEILLANCE CAMERA SYSTEM: Existing camera will be reused on rest dynamic message sign. Include all costs for camera, illuminator, power supply, ethernet switch and other equipment installation in accordance with the manufacturers’ requirements in the price bid for “REVISE DYNAMIC MESSAGE SIGN”

772-P08 PULL BOXES: Provide polymer concrete type pull boxes. Determine appropriate size of pull box at each location. Clearly mark the cover as required. Duct seal all conduits entering and exiting pull boxes. Include pull boxes in the price bid for “Revise Dynamic Message Sign”.

772-P09 MULTIPLE UNDERGROUND CABLE: Furnish and install Multiple Underground Cable or rigid conduit and single RHW conductors of the same size as shown in the plans for the Multiple Underground Cable. Size the conduit as specified in the National Electric Code. Include all materials, equipment, and labor required to install conduit and conductors in the price bid for “Revise Dynamic Message Sign.”

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	6	12

ENVIRONMENTAL NOTES

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

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

This document was originally issued and sealed by Scott Middaugh Registration Number PE- 7499, on 08/26/20 and the original document is stored at the North Dakota Department of Transportation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	8	1

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU - Federal Eligible	100% City Funds			TOTAL
103	0100	CONTRACT BOND	L SUM	1				1
108	0001	CRITICAL PATH METHOD SCHEDULE	L SUM	1				1
201	0330	CLEARING & GRUBBING	L SUM	1				1
202	0105	REMOVAL OF STRUCTURE	L SUM	1				1
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	186				186
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	10				10
202	0312	REMOVE EXISTING FENCE	LF	751				751
203	0101	COMMON EXCAVATION-TYPE A	CY	7944				7944
203	0109	TOPSOIL	CY	30243				30243
203	0115	CLAY EXCAVATION	CY	87269				87269
203	0116	TOPSOIL MANDATORY BORROW AREA	CY	3993				3993
203	0117	MANDATORY BORROW	CY	168617				168617
210	0050	BOX CULVERT EXCAVATION	EA	1				1
210	0099	CLASS 1 EXCAVATION	L SUM	1				1
210	0199	BACKFILL CLASS AA	LF	609	552			1161
210	0201	FOUNDATION PREPARATION	EA	1				1
210	0210	FOUNDATION FILL	CY	2028				2028
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1				1
216	0100	WATER	M GAL	1867				1867
230	0165	SUBGRADE PREPARATION-TYPE A-12IN	STA	14				14
251	0300	SEEDING CLASS III	ACRE	21.38				21.38
251	2000	TEMPORARY COVER CROP	ACRE	34.02				34.02
253	0101	STRAW MULCH	ACRE	34.02				34.02
253	0201	HYDRAULIC MULCH	ACRE	14.73				14.73
255	0102	ECB TYPE 2	SY	32175				32175
255	0202	TRM TYPE 2	SY	118				118
258	0100	CONCRETE SLOPE PROTECTION	SY	709				709
260	0200	SILT FENCE SUPPORTED	LF	1513				1513
260	0201	REMOVE SILT FENCE SUPPORTED	LF	1513				1513
261	0112	FIBER ROLLS 12IN	LF	17589				17589
261	0113	REMOVE FIBER ROLLS 12IN	LF	17589				17589
265	0100	STABILIZED CONSTRUCTION ACCESS	EA	2				2
265	0101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	2				2
302	0101	SALVAGED BASE COURSE	CY	62				62
302	0121	AGGREGATE BASE COURSE CL 5	CY	7109				7109
302	9970	TYPE II PIPE BEDDING	CY	350	150			500
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	648				648
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	SY	14648				14648
602	0130	CLASS AAE-3 CONCRETE	CY	746.7				746.7
602	1130	CLASS AE-3 CONCRETE	CY	265.7				265.7
602	1133	CONCRETE BRIDGE APPROACH SLAB	SY	230				230
602	1134	PILE SUPPORTED APPROACH SLAB	SY	230				230
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	3250				3250
606	1209	12FT X 9FT PRECAST RCB CULVERT	LF	92				92
606	5209	12FT X 9FT PRECAST RCB END SECTION	EA	2				2
612	0115	REINFORCING STEEL-GRADE 60	LBS	32621				32621
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	157843				157843

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	8	2

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU - Federal Eligible	100% City Funds			TOTAL
616	5890	STRUCTURAL STEEL	L SUM	1				1
622	0020	STEEL PILING HP 10 X 42	LF	1250				1250
622	0068	STEEL PILING HP 14 X 89	LF	1750				1750
622	0070	STEEL PILING HP 14 X 102	LF	1540				1540
624	0124	PEDESTRIAN FENCE	LF	465.3				465.3
702	0100	MOBILIZATION	L SUM	1				1
704	0100	FLAGGING	MHR	200				200
704	1000	TRAFFIC CONTROL SIGNS	UNIT	3417				3417
704	1045	ATTENUATION DEVICE-TYPE B-75	EA	4				4
704	1052	TYPE III BARRICADE	EA	23				23
704	1060	DELINEATOR DRUMS	EA	144				144
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	292				292
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	3				3
706	0400	FIELD OFFICE	EA	1				1
708	1540	INLET PROTECTION-SPECIAL	EA	41				41
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	41				41
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	187				187
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	18583				18583
714	0215	PIPE CONC REINF 15IN CL V-STORM DRAIN	LF	224				224
714	0325	PIPE CONC REINF 18IN CL IV-STORM DRAIN	LF	22				22
714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN	LF	256				256
714	0825	PIPE CONC REINF 30IN CL III-STORM DRAIN	LF	47				47
714	0910	PIPE CONC REINF 36IN CL III-STORM DRAIN	LF	394				394
714	1002	PIPE CONC REINF 42IN CL II-STORM DRAIN	LF	101				101
714	4092	PIPE CONDUIT 12IN-STORM DRAIN	LF	216				216
714	4097	PIPE CONDUIT 15IN-STORM DRAIN	LF	1185				1185
714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	887				887
714	4103	PIPE CONDUIT 21IN-STORM DRAIN	LF	152				152
714	4107	PIPE CONDUIT 24IN-STORM DRAIN	LF	546				546
714	4112	PIPE CONDUIT 30IN-STORM DRAIN	LF	293				293
714	4117	PIPE CONDUIT 36IN-STORM DRAIN	LF	157				157
714	4121	PIPE CONDUIT 42IN-STORM DRAIN	LF	536				536
714	7175	PIPE PVE 36IN SEWER	LF		998			998
714	8498	CASING PIPE 18IN	LF	256				256
714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	4				4
714	9696	EDGEDRAIN NON PERMEABLE BASE	LF	2853				2853
722	0100	MANHOLE 48IN	EA	4				4
722	0110	MANHOLE 60IN	EA	2				2
722	0120	MANHOLE 72IN	EA	3				3
722	0130	MANHOLE 84IN	EA	5				5
722	0140	MANHOLE 96IN	EA	1				1
722	0200	MANHOLE 108IN	EA	1				1
722	0300	MANHOLE SANITARY	EA		3			3
722	1100	MANHOLE RISER 48IN	LF	18.85				18.85
722	1110	MANHOLE RISER 60IN	LF	8.38				8.38
722	1120	MANHOLE RISER 72IN	LF	14.14				14.14
722	1130	MANHOLE RISER 84IN	LF	31.69				31.69

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	8	3

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU - Federal Eligible	100% City Funds			TOTAL
722	1140	MANHOLE RISER 96IN	LF	6.07				6.07
722	1200	MANHOLE RISER 108IN	LF	6.31				6.31
722	3510	INLET-TYPE 2	EA	9				9
722	3520	INLET-TYPE 2 DOUBLE	EA	7				7
722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN	EA	11				11
722	3800	INLET SPECIAL CATCH BASIN-TYPE A 60IN	EA	3				3
722	4025	INLET CATCH BASIN BEEHIVE	EA	8				8
724	0210	FITTINGS-DUCTILE IRON	LBS		1938			1938
724	0300	GATE VALVE & BOX 6IN	EA		5			5
724	0310	GATE VALVE & BOX 8IN	EA		3			3
724	0317	GATE VALVE & BOX 16IN	EA		1			1
724	0411	6IN HYDRANT	EA		5			5
724	0810	WATERMAIN 6IN PVC	LF		46			46
724	0830	WATERMAIN 8IN PVC	LF		896			896
724	0850	WATERMAIN 12IN PVC	LF		40			40
724	0852	WATERMAIN 16IN PVC	LF		1303			1303
724	1117	12IN SANITARY SEWER PIPE	LF		220			220
724	1118	15IN SANITARY SEWER PIPE	LF		165			165
748	0190	CURB & GUTTER-TYPE I 30IN	LF	6817				6817
748	0210	CURB & GUTTER 42IN	LF	243				243
748	1020	VALLEY GUTTER 36IN	SY	30				30
750	0030	PIGMENTED IMPRINTED CONCRETE	SY	309				309
750	0120	SIDEWALK CONCRETE 5IN REINF	SY	5720				5720
750	0140	SIDEWALK CONCRETE 6IN	SY	277				277
750	0210	CONCRETE MEDIAN NOSE PAVING	SY	39				39
750	2115	DETECTABLE WARNING PANELS	SF	236				236
752	0600	FENCE CHAIN LINK	LF	813				813
752	0922	FENCE REMOVE & RESET	LF	813				813
752	2996	CORNER ASSEMBLY-STEEL POST	EA	8				8
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	153.6				153.6
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	18				18
754	0137	ROADWAY TERMINATION-TYPE A	EA	2				2
754	0170	FLEXIBLE DELINEATORS	EA	50				50
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	237				237
754	0805	OBJECT MARKERS - CULVERTS	EA	12				12
754	8025	REVISE DYNAMIC MESSAGE SIGN	EA	1				1
762	0113	EPOXY PVMT MK 4IN LINE	LF	9634				9634
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	128				128
762	1104	PVMT MK PAINTED 4IN LINE	LF	132				132
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	725				725
762	1317	PREFORMED PATTERNED PVMT MK 16IN LINE-GROOVED	LF	68				68
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF	6552				6552
764	0131	W-BEAM GUARDRAIL	LF	195.1				195.1
764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	4				4
770	0003	LIGHTING SYSTEM A	EA	1				1
772	9200	IT SYSTEM	EA	1				1
900	0100	SETTLEMENT PLATE	EA	20				20

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	8	4

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION		UNIT	SU - Federal Eligible	100% City Funds			TOTAL
920	1000	GEOFOAM		CY	33491				33491
920	1050	GEOMEMBRANE		SY	16095				16095
920	1300	PREFABRICATED VERTICAL WICK DRAINS		LF	659568				659568
920	1318	VIBRATING WIRE PIEZOMETER		EA	4				4
920	1320	VIBRATING WIRE DATA LOGGER		EA	2				2
920	2130	SAND DRAIN		TON	37489				37489
930	3000	BRIDGE BENCH MARKS		SET	1				1
930	4215	INSTRUMENTATION-AUTOMATED GROUND MOVEMENT SENSOR		EA	2				2
930	7012	ROADWAY CANOPY		L SUM	1				1
930	9537	ABUTMENT UNDERDRAIN SYSTEM		EA	2				2
624	0151	RAILING	Bid Option - 1	LF	465.3				465.3
602	7050	ARCHITECTURAL SURFACE FINISH	Bid Option - 2	SF	4169				4169

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	10	1

754 0805 OBJECT MARKERS - CULVERTS			
Project No.	Station	Alignment	Quantity (EA)
SU-8-984(153)156	64TH AVENUE SOUTH		
	110+98.0	64th Ave S (PR64)	1
	117+18.2		1
	117+61.5		1
	117+80.1		1
	118+00.1		1
	118+98.8		1
	119+42.2		1
	120+01.0		1
	120+03.3		1
	123+22.3		1
	134+27.5		1
	137+37.7		1
		TOTAL =	12

216 0100 WATER			
Material	Basis	Basis Quantity	Quantity (MGAL)
Dust Palliative	25 M Gal/ Mile	0.50	13
Dust Palliative for Haul Road	25 M Gal/ Mile	1.50	38
Subgrade Preparation	25 M Gal/ Mile	0.27	7
Aggregate Base Course CL 5	38 Gal/CY	7,200	144
Embankment (Not Including Surcharge)	10 Gal/CY	188,400	1,884
		Project Total	**2,086**

230 0165 SUBGRADE PREPARATION-TYPE A-12IN		
Begin Station	End Station	Length (Sta)
Sta 104+00.00	Sta 116+00.00	12
Sta 140+00.00	Sta 142+00.00	2
	Project Total	14

SPEC	CODE	BID ITEM	QTY	UNIT
216	0100	WATER		
		SU-8-984(153)156	1,867	M GAL
230	0165	SUBGRADE PREPARATION-TYPE A-12IN		
		SU-8-984(153)156	14	STA
754	0805	OBJECT MARKERS - CULVERTS		
		SU-8-984(153)156	12	EA

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

Pavement and Base
Aggregate Base Course CL 5 @ 1.875 Ton/CY
Sand Drain @ 1.875 Ton/CY
Tack Coat @ 0.05 Gal/SY
Commercial Grade HMA @ 2 Ton/CY

Removals
Aggregate Base @ 1.875 Ton/CY
Hot Mix Asphalt @ 2 Ton/CY
Concrete @ 2 Ton/CY

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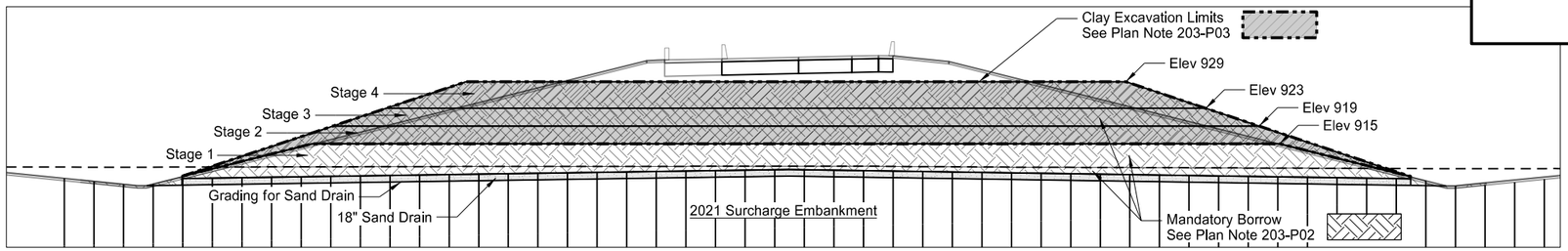
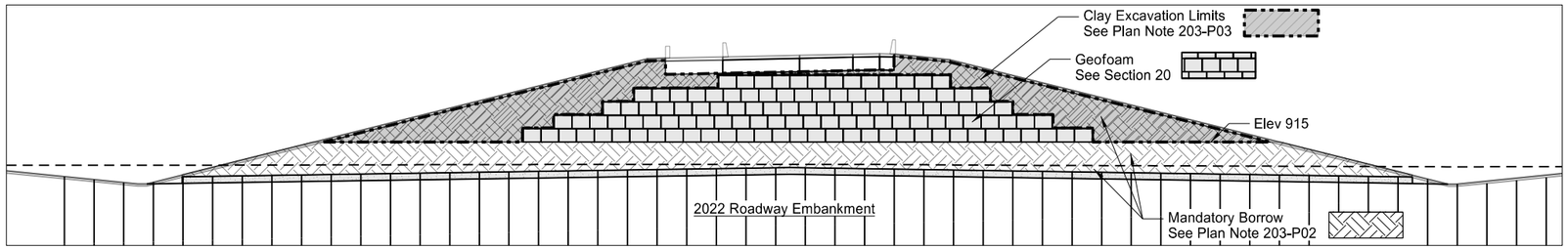
64th Avenue South - 38th St S to 33rd St S

Basis of Estimate

64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	11	1





SPEC	CODE	BID ITEM	QTY	UNIT
203	0101	COMMON EXCAVATION-TYPE A		
		SU-8-984(153)156	7,944	CY
203	0109	TOPSOIL		
		SU-8-984(153)156	30,243	CY
203	0115	CLAY EXCAVATION		
		SU-8-984(153)156	87,269	CY
203	0117	MANDATORY BORROW		
		SU-8-984(153)156	168,617	CY

SU-8-984(153)156 Earthwork Quantities (For Information Only)

LOCATION	EARTHWORK SUMMARY Excavation (CY)	EARTHWORK SUMMARY Embankment (CY)
2021 Surcharge Embankment		
Grading for Sand Drain - Sta 116+90.00 to Sta 127+40.00	1,905	6,730
Stage 1 West - Sta 116+90.00 to Sta 127+40.00		37,393
Stage 2 West - Sta 117+85.69 to Sta 127+24.00		24,087
Stage 3 West - Sta 118+81.11 to Sta 127+16.00		17,956
Stage 4 West - Sta 126+36.00 to Sta 127+08.00		2,096
SUBTOTAL (West of I-29) =	1,905	88,262
Grading for Sand Drain - Sta 130+24.00 to Sta 140+33.96	2,748	3,832
Stage 1 East - Sta 130+24.00 to Sta 140+33.96		33,913
Stage 2 East - Sta 130+40.00 to Sta 139+77.59		23,397
Stage 3 East - Sta 130+48.00 to Sta 139+44.00		17,548
Phase 4 East - Sta 130+56.00 to Sta 131+29.00		2,185
SUBTOTAL (East of I-29) =	2,748	80,875
TOTAL =	4,653	169,137
2022 Roadway Embankment		
Roadway Embankment West - Sta 104+00.00 to Sta 116+90.00	1,190	15,459
Roadway Embankment West - Sta 116+90.00 to Interstate 29	785	76,186
SUBTOTAL (West of I-29) =	1,975	91,645
Roadway Embankment East - Interstate 29 to Sta 140+33.96	922	63,216
Roadway Embankment East - Sta 140+33.96 to Sta 142+00.00	394	999
Proposed DMS Sign Grading		820
SUBTOTAL (East of I-29) =	1,316	65,035
TOTAL =	3,291	156,680

SU-8-984(153)156 Earthwork Summary

LOCATION	EARTHWORK SUMMARY 203 0101 COMMON EXCAVATION-TYPE A (CY)	EARTHWORK SUMMARY 203 0115 CLAY EXCAVATION (See Note 1) (CY)	EARTHWORK SUMMARY 203 0117 MANDATORY BORROW (See Note 2) (CY)	TOPSOIL SUMMARY 203 0109 TOPSOIL (See Note 3) (CY)
2021 Surcharge Embankment				
West of Interstate 29	1,905	44,139 *	86,357	
East of Interstate 29	2,748	43,130 *	A= 78,127 [2]	
SUBTOTAL =	4,653	87,269 [1]	164,484	-
2022 Roadway Embankment				
Roadway Embankment West - Sta 104+00.00 to Interstate 29	1,975		B= 89,670 [2]	19,117
Roadway Embankment East - Interstate 29 to Sta 142+00.00	1,316		62,899	10,845
Proposed DMS Sign Grading			C= 820 [2]	281
SUBTOTAL =	3,291	-	153,389	30,243
TOTAL =	7,944	87,269 [1]	D=A+B+C= 168,617 [2]	30,243 [3]

The computation report is not a balance sheet. Contractor to balance their own materials.
Quantities do not include material generated from storm sewer, sanitary sewer, water lines, or box culvert excavations.
No shrinkage factor has been applied.
* See Surcharge Earthwork Tables for Stages 2, 3 & 4.
1. Quantities do not account for settlement. Pay quantity will be determined by surveyed volumes after settlement.
2. Pay quantity is the largest Mandatory Borrow quantity for 2021 Surcharge or 2022 Roadway quantified West and East of I-29 plus DMS Sign Grading. Excess material to be wasted on inslopes.
3. Existing topsoil is assumed to be 12" thick.

SU-8-984(153)156 Sand Drain Quantities (See Section 20 for Layout and Pay Quantities)

LOCATION	SUMMARY Sand Drain (CY)
2021 Sand Drain Quantites	
Sand Drain West - Sta 120+80.00 to Sta 126+72.00	10,146
Sand Drain East - Sta 130+92.00 to Sta 136+84.00	9,848
SUBTOTAL =	19,994

SU-8-984(153)156 Geofoam Quantities (See Section 20 for Layout and Pay Quantities)

LOCATION	SUMMARY Geofoam (CY)
2022 Geofoam Quantites	
Geofoam West - Sta 120+80.00 to Sta 126+72.00	16,747
Geofoam East - Sta 130+92.00 to Sta 136+84.00	16,744
SUBTOTAL =	33,491

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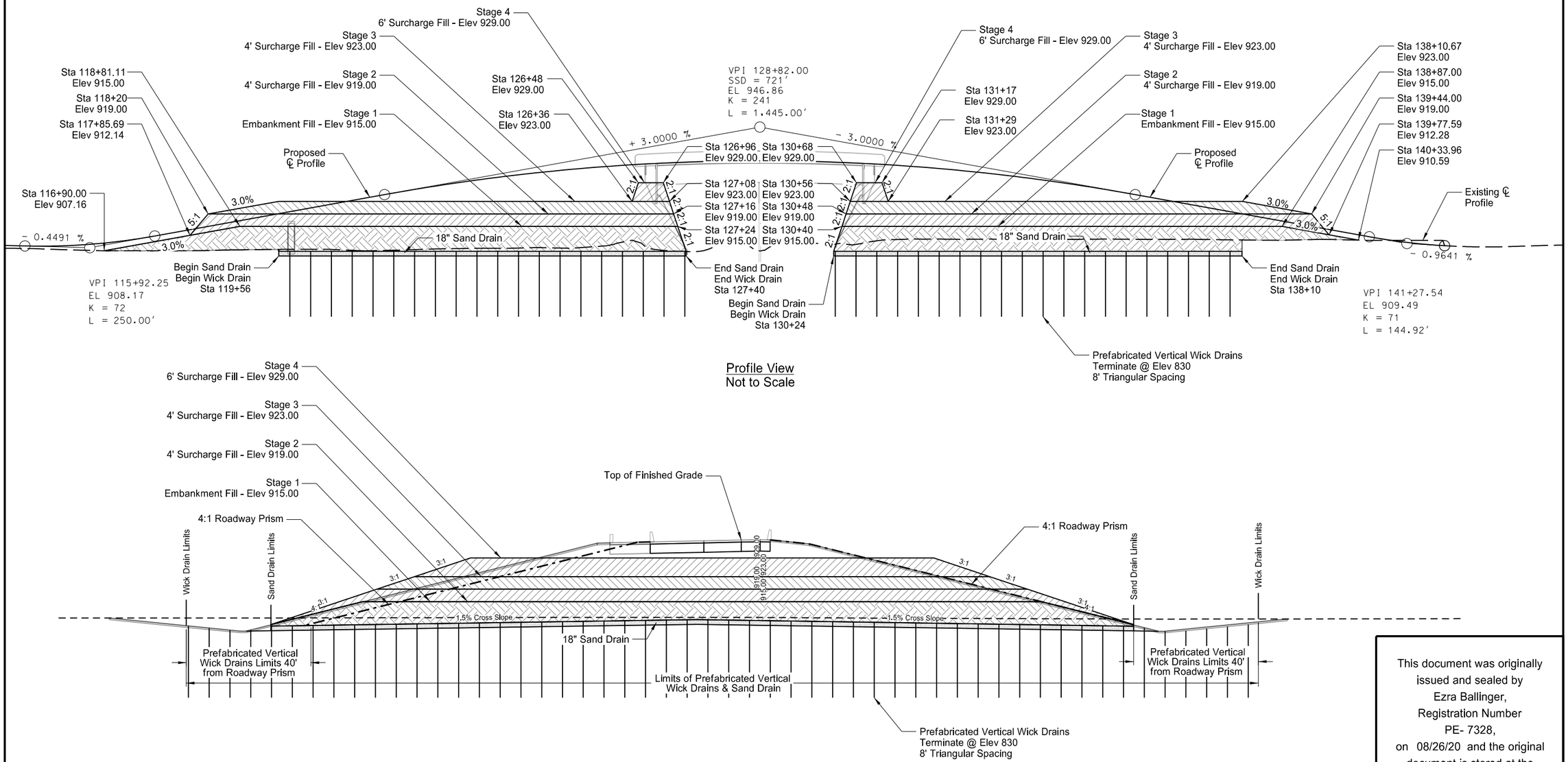
64th Avenue South - 38th St S to 33rd St S

Earthwork Summary

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	1



Profile View
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Section View
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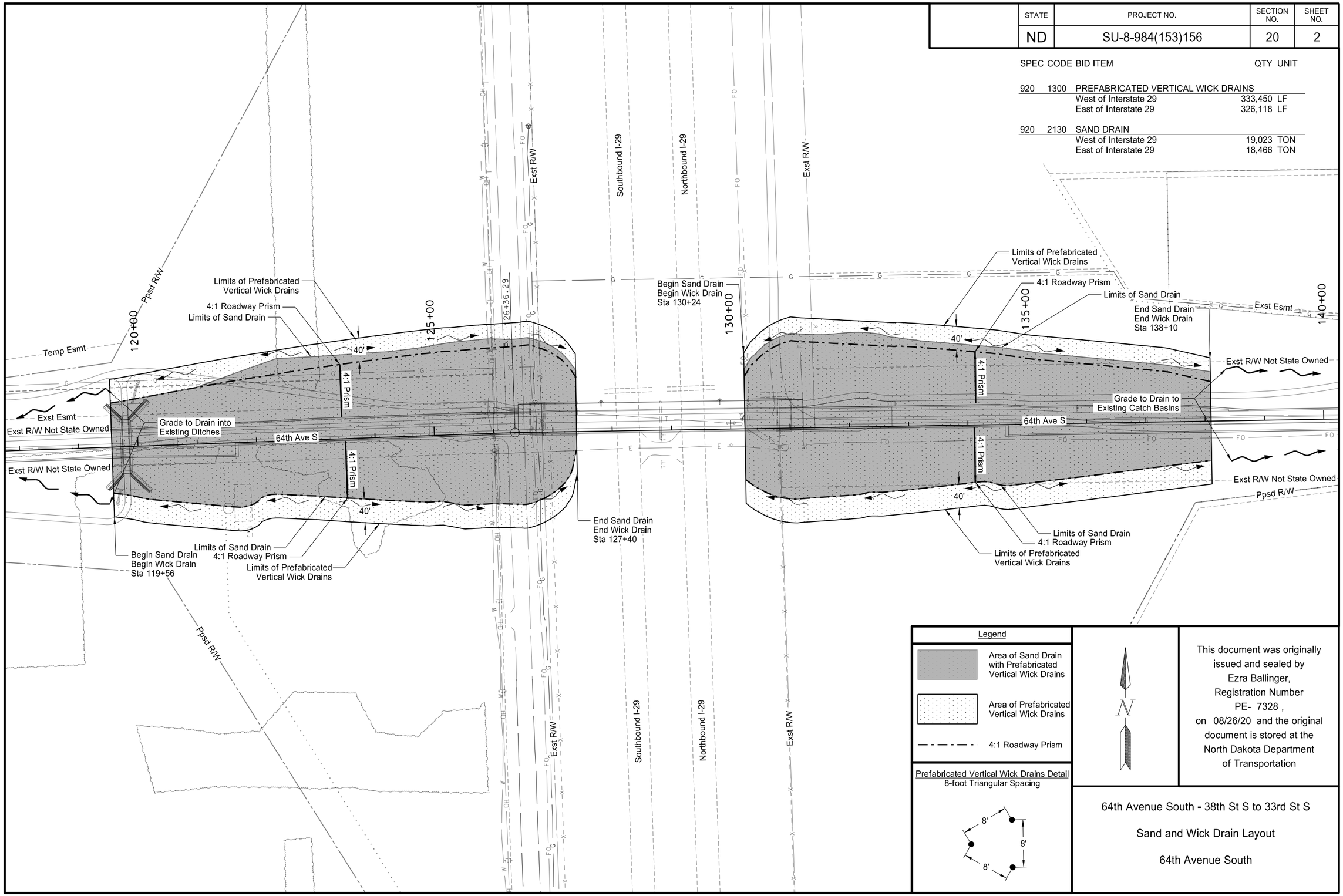
64th Avenue South - 38th St S to 33rd St S

Wick Drain, Sand Drain, and Surcharge Detail

64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	2

SPEC	CODE	BID ITEM	QTY	UNIT
920	1300	PREFABRICATED VERTICAL WICK DRAINS		
		West of Interstate 29	333,450	LF
		East of Interstate 29	326,118	LF
920	2130	SAND DRAIN		
		West of Interstate 29	19,023	TON
		East of Interstate 29	18,466	TON



Legend

- Area of Sand Drain with Prefabricated Vertical Wick Drains
- Area of Prefabricated Vertical Wick Drains
- 4:1 Roadway Prism

Prefabricated Vertical Wick Drains Detail
8-foot Triangular Spacing

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64th Avenue South - 38th St S to 33rd St S

Sand and Wick Drain Layout

64th Avenue South

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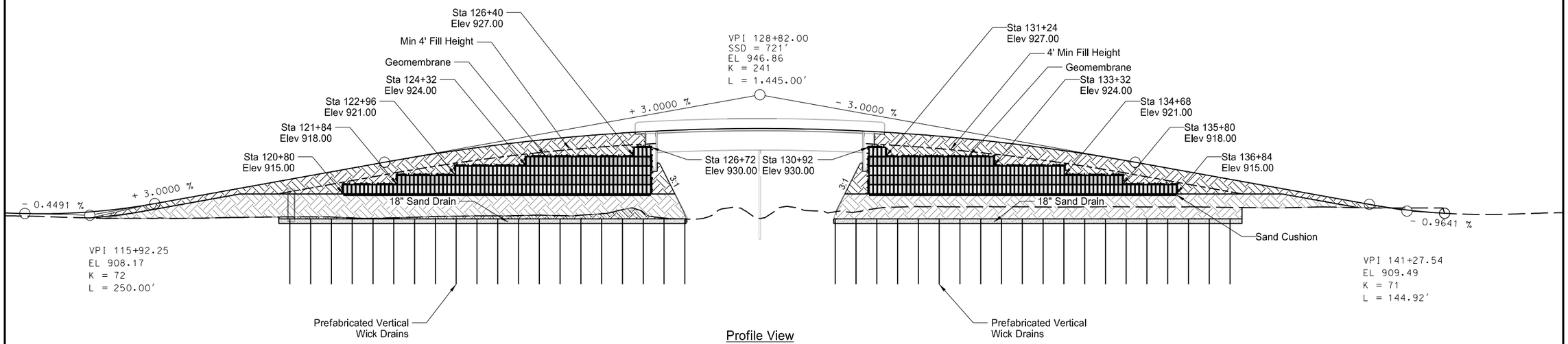
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	3



Profile View
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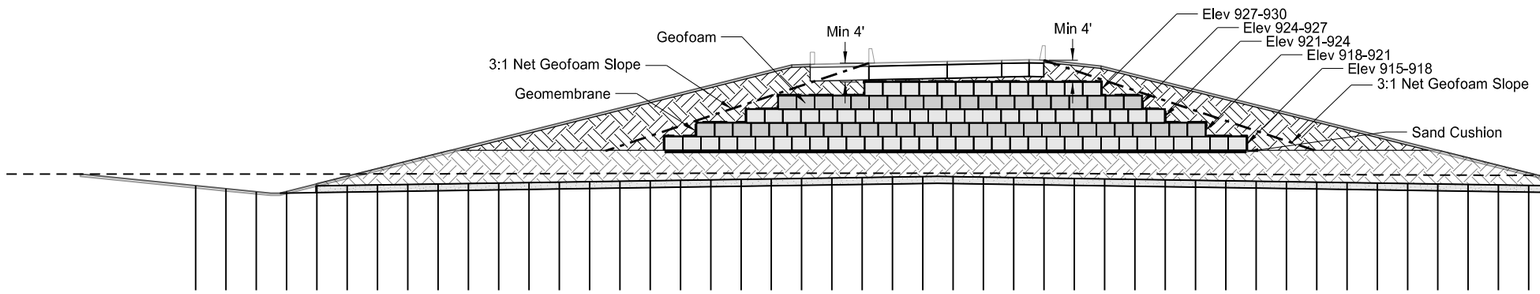
Note:
Geofoam is configured using 3'x4'x8' (HxWxL) blocks. Geofoam block dimensions may vary. Submit any size change requests, placement, layouts, and diagrams to the Engineer for approval prior to the pre-construction conference.



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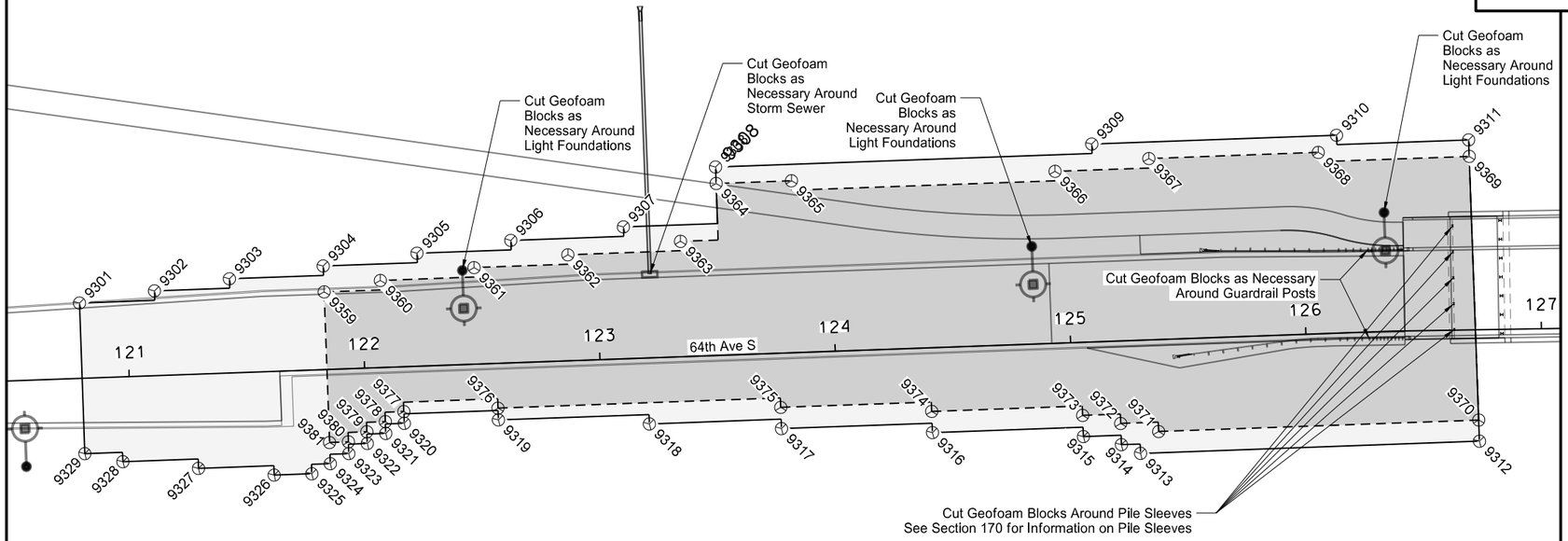
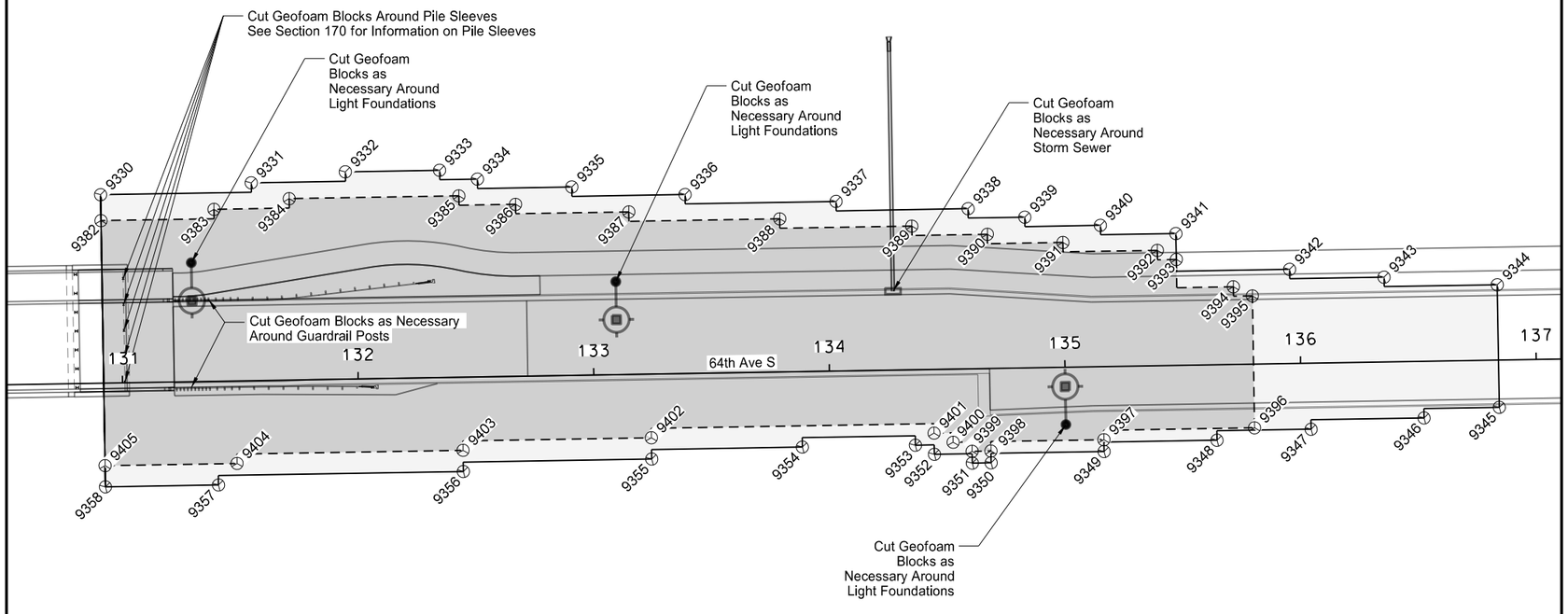
64th Avenue South - 38th St S to 33rd St S

Geofoam and Geomembrane Detail

64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	4





SPEC	CODE	BID ITEM	QTY	UNIT
920	1000	GEOFOAM		
		Elevation 915-918 (West of I-29)	6,588	CY
		Elevation 915-918 (East of I-29)	6,514	CY
		Elevation 918-921 (West of I-29)	4,811	CY
		Elevation 918-921 (East of I-29)	4,946	CY
920	1050	GEOMEMBRANE		
		Elevation 915-918 (West of I-29)	2,277	SY
		Elevation 915-918 (East of I-29)	2,059	SY
		Elevation 918-921 (West of I-29)	1,977	SY
		Elevation 918-921 (East of I-29)	2,065	SY

Elevation 915-918

Elevation 918-921

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64th Avenue South - 38th St S to 33rd St S

Geofoam Points
Elevation 918 & 921

64th Avenue South

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	5

Geofoam Elevation 915-918					
Point	Northing	Easting	Station	Offset	Desc
9301	430895.17	2884735.75	120+80.01	-32.00	GEOFOAM 918
9302	430900.32	2884767.59	121+12.01	-36.00	GEOFOAM 918
9303	430905.47	2884799.42	121+44.01	-40.00	GEOFOAM 918
9304	430910.90	2884839.25	121+84.01	-44.00	GEOFOAM 918
9305	430916.34	2884879.08	122+24.01	-48.00	GEOFOAM 918
9306	430921.78	2884918.91	122+64.01	-52.00	GEOFOAM 918
9307	430927.50	2884966.74	123+12.01	-56.00	GEOFOAM 918
9308	430952.92	2885005.85	123+52.01	-80.00	GEOFOAM 918
9309	430962.67	2885165.60	125+12.01	-84.00	GEOFOAM 918
9310	430966.41	2885269.53	126+16.01	-84.00	GEOFOAM 918
9311	430964.44	2885325.64	126+70.44	-80.69	GEOFOAM 918
9312	430836.51	2885330.24	126+72.93	47.30	GEOFOAM 918
9313	430831.33	2885186.34	125+28.01	48.00	GEOFOAM 918
9314	430835.04	2885178.20	125+20.01	44.00	GEOFOAM 918
9315	430838.46	2885162.06	125+04.01	40.00	GEOFOAM 918
9316	430840.16	2885097.96	124+40.01	36.00	GEOFOAM 918
9317	430841.86	2885033.86	123+76.01	32.00	GEOFOAM 918
9318	430843.84	2884977.75	123+20.01	28.00	GEOFOAM 918
9319	430845.54	2884913.65	122+56.01	24.00	GEOFOAM 918
9320	430844.10	2884873.68	122+16.01	24.00	GEOFOAM 918
9321	430839.81	2884865.82	122+08.01	28.00	GEOFOAM 918
9322	430835.53	2884857.97	122+00.01	32.00	GEOFOAM 918
9323	430831.24	2884850.12	121+92.01	36.00	GEOFOAM 918
9324	430826.96	2884842.27	121+84.01	40.00	GEOFOAM 918
9325	430822.67	2884834.42	121+76.01	44.00	GEOFOAM 918
9326	430822.11	2884818.43	121+60.00	43.99	GEOFOAM 918
9327	430824.96	2884786.30	121+28.00	39.99	GEOFOAM 918
9328	430827.81	2884754.18	120+96.00	35.99	GEOFOAM 918
9329	430831.23	2884738.05	120+80.00	31.99	GEOFOAM 918
9330	430970.70	2885747.15	130+92.00	-80.00	GEOFOAM 918
9331	430975.75	2885811.08	131+56.00	-84.00	GEOFOAM 918
9332	430980.41	2885851.01	131+96.00	-88.00	GEOFOAM 918
9333	430981.07	2885891.00	132+36.00	-88.00	GEOFOAM 918
9334	430977.34	2885907.07	132+52.00	-84.00	GEOFOAM 918
9335	430974.00	2885947.13	132+92.00	-80.00	GEOFOAM 918
9336	430970.79	2885995.19	133+40.00	-76.00	GEOFOAM 918
9337	430967.84	2886059.24	134+04.00	-72.00	GEOFOAM 918
9338	430964.77	2886115.30	134+60.00	-68.00	GEOFOAM 918
9339	430961.17	2886139.36	134+84.00	-64.00	GEOFOAM 918
9340	430957.69	2886171.43	135+16.00	-60.00	GEOFOAM 918
9341	430954.22	2886203.49	135+48.00	-56.00	GEOFOAM 918
9342	430939.02	2886251.74	135+96.00	-40.00	GEOFOAM 918
9343	430935.68	2886291.80	136+36.00	-36.00	GEOFOAM 918
9344	430932.47	2886339.86	136+84.00	-32.00	GEOFOAM 918
9345	430880.47	2886340.72	136+84.00	20.00	GEOFOAM 918
9346	430875.95	2886308.79	136+52.00	24.00	GEOFOAM 918
9347	430871.16	2886260.86	136+04.00	28.00	GEOFOAM 918
9348	430866.50	2886220.94	135+64.00	32.00	GEOFOAM 918
9349	430861.71	2886173.01	135+16.00	36.00	GEOFOAM 918
9350	430856.92	2886125.08	134+68.00	40.00	GEOFOAM 918
9351	430856.78	2886117.08	134+60.00	40.00	GEOFOAM 918
9352	430860.52	2886101.02	134+44.00	36.00	GEOFOAM 918
9353	430864.39	2886092.95	134+36.00	32.00	GEOFOAM 918
9354	430863.60	2886044.96	133+88.00	32.00	GEOFOAM 918
9355	430858.54	2885981.03	133+24.00	36.00	GEOFOAM 918
9356	430853.22	2885901.11	132+44.00	40.00	GEOFOAM 918
9357	430847.51	2885797.19	131+40.00	44.00	GEOFOAM 918
9358	430846.72	2885749.20	130+92.00	44.00	GEOFOAM 918

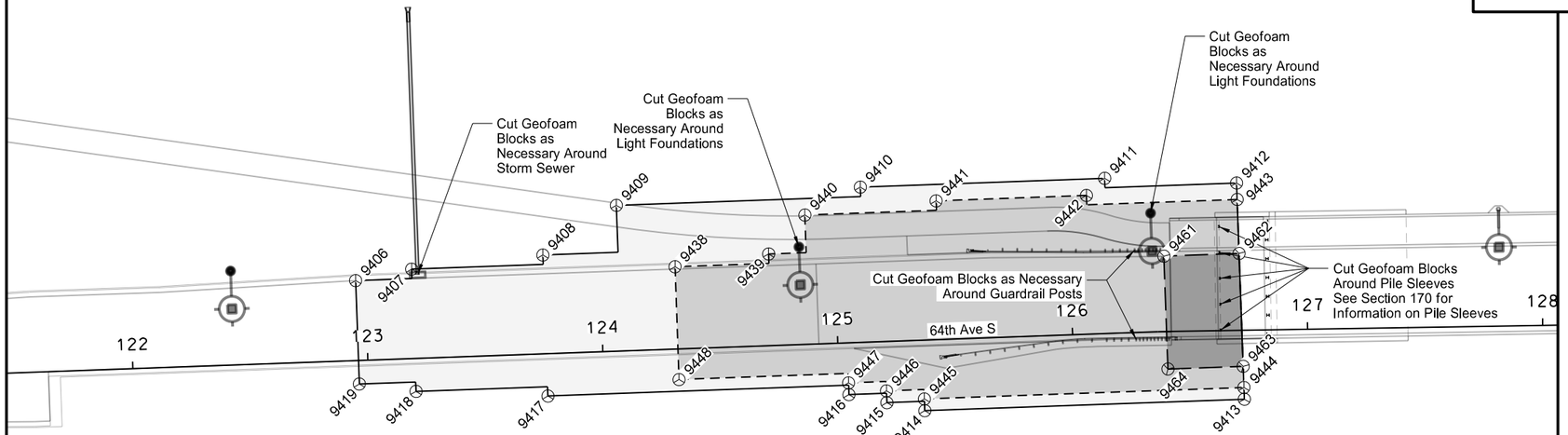
Geofoam Elevation 918-921					
Point	Northing	Easting	Station	Offset	Desc
9359	430899.91	2884839.65	121+84.01	-33.00	GEOFOAM 921
9360	430904.77	2884863.49	122+08.01	-37.00	GEOFOAM 921
9361	430910.21	2884903.32	122+48.01	-41.00	GEOFOAM 921
9362	430915.64	2884943.15	122+88.01	-45.00	GEOFOAM 921
9363	430921.37	2884990.97	123+36.01	-49.00	GEOFOAM 921
9364	430945.93	2885006.10	123+52.01	-73.00	GEOFOAM 921
9365	430947.08	2885038.08	123+84.01	-73.00	GEOFOAM 921
9366	430951.10	2885150.01	124+96.01	-73.00	GEOFOAM 921
9367	430956.54	2885189.84	125+36.01	-77.00	GEOFOAM 921
9368	430959.13	2885261.79	126+08.01	-77.00	GEOFOAM 921
9369	430957.43	2885325.89	126+70.58	-73.68	GEOFOAM 921
9370	430845.50	2885329.92	126+72.76	38.30	GEOFOAM 921
9371	430840.61	2885194.01	125+36.01	39.00	GEOFOAM 921
9372	430844.04	2885177.87	125+20.01	35.00	GEOFOAM 921
9373	430847.46	2885161.74	125+04.01	31.00	GEOFOAM 921
9374	430849.15	2885097.64	124+40.01	27.00	GEOFOAM 921
9375	430850.85	2885033.54	123+76.01	23.00	GEOFOAM 921
9376	430850.53	2884913.47	122+56.01	19.00	GEOFOAM 921
9377	430849.10	2884873.50	122+16.01	19.00	GEOFOAM 921
9378	430844.81	2884865.65	122+08.01	23.00	GEOFOAM 921
9379	430840.53	2884857.79	122+00.01	27.00	GEOFOAM 921
9380	430836.24	2884849.94	121+92.01	31.00	GEOFOAM 921
9381	430835.95	2884841.95	121+84.01	31.00	GEOFOAM 921
9382	430959.70	2885747.33	130+92.00	-69.00	GEOFOAM 921
9383	430964.49	2885795.26	131+40.00	-73.00	GEOFOAM 921
9384	430969.02	2885827.19	131+72.00	-77.00	GEOFOAM 921
9385	430970.21	2885899.18	132+44.00	-77.00	GEOFOAM 921
9386	430966.60	2885923.24	132+68.00	-73.00	GEOFOAM 921
9387	430963.39	2885971.30	133+16.00	-69.00	GEOFOAM 921
9388	430960.45	2886035.36	133+80.00	-65.00	GEOFOAM 921
9389	430957.37	2886091.42	134+36.00	-61.00	GEOFOAM 921
9390	430953.90	2886123.48	134+68.00	-57.00	GEOFOAM 921
9391	430950.43	2886155.54	135+00.00	-53.00	GEOFOAM 921
9392	430947.09	2886195.60	135+40.00	-49.00	GEOFOAM 921
9393	430943.22	2886203.67	135+48.00	-45.00	GEOFOAM 921
9394	430931.62	2886227.86	135+72.00	-33.00	GEOFOAM 921
9395	430927.75	2886235.93	135+80.00	-29.00	GEOFOAM 921
9396	430871.76	2886236.85	135+80.00	27.00	GEOFOAM 921
9397	430866.71	2886172.93	135+16.00	31.00	GEOFOAM 921
9398	430861.91	2886125.00	134+68.00	35.00	GEOFOAM 921
9399	430861.78	2886117.00	134+60.00	35.00	GEOFOAM 921
9400	430865.65	2886108.93	134+52.00	31.00	GEOFOAM 921
9401	430869.52	2886100.87	134+44.00	27.00	GEOFOAM 921
9402	430867.54	2885980.89	133+24.00	27.00	GEOFOAM 921
9403	430862.22	2885900.96	132+44.00	31.00	GEOFOAM 921
9404	430856.64	2885805.04	131+48.00	35.00	GEOFOAM 921
9405	430855.71	2885749.05	130+92.00	35.00	GEOFOAM 921

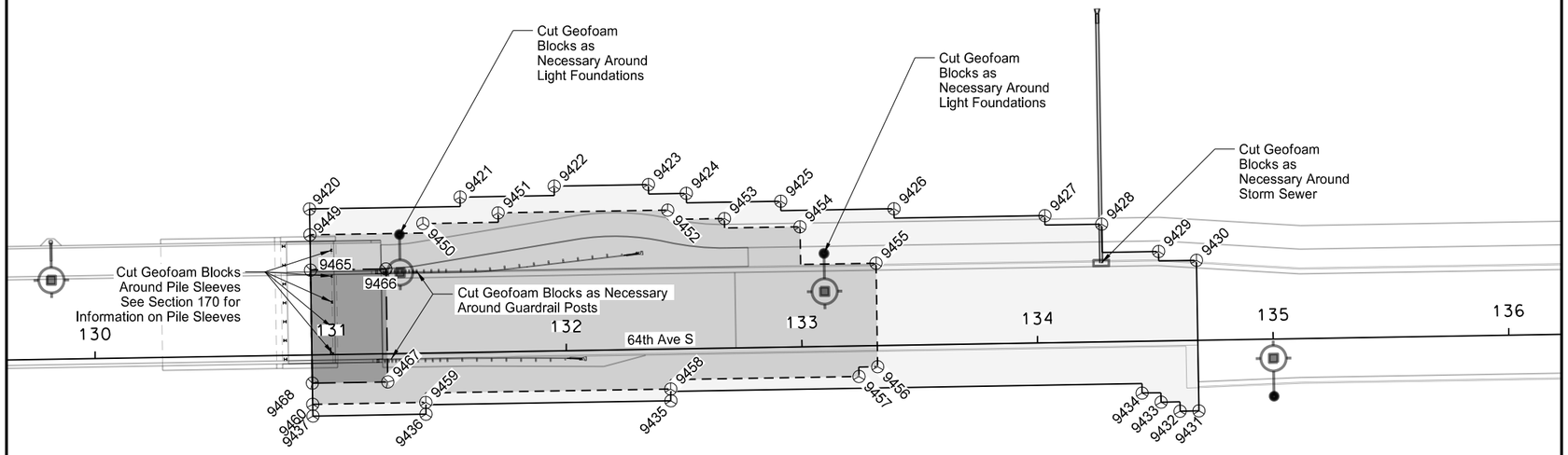
64th Avenue South - 38th St S to 33rd St S

Geofoam Points
Elevation 918 & 921

64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	6





SPEC	CODE	BID ITEM	QTY	UNIT
920	1000	GEOFOAM		
		Elevation 921-924 (West of I-29)	3,250	CY
		Elevation 921-924 (East of I-29)	3,289	CY
		Elevation 924-927 (West of I-29)	1,927	CY
		Elevation 924-927 (East of I-29)	1,824	CY
		Elevation 927-930 (West of I-29)	171	CY
		Elevation 927-930 (East of I-29)	171	CY
920	1050	GEOMEMBRANE		
		Elevation 921-924 (West of I-29)	1,638	SY
		Elevation 921-924 (East of I-29)	1,788	SY
		Elevation 924-927 (West of I-29)	1,973	SY
		Elevation 924-927 (East of I-29)	1,868	SY
		Elevation 927-930 (West of I-29)	225	SY
		Elevation 927-930 (East of I-29)	225	SY

Elevation 921-924

Elevation 924-927

Elevation 927-930

N

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64th Avenue South - 38th St S to 33rd St S

Geofoam Points
Elevation 924, 927, & 930

64th Avenue South

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	7

Geofoam Elevation 921-924					
Point	Northing	Easting	Station	Offset	Desc
9406	430904.94	2884951.54	122+96.01	-34.00	GEOFOAM 924
9407	430909.80	2884975.38	123+20.01	-38.00	GEOFOAM 924
9408	430915.81	2885031.20	123+76.01	-42.00	GEOFOAM 924
9409	430936.95	2885062.46	124+08.01	-62.00	GEOFOAM 924
9410	430944.68	2885166.25	125+12.01	-66.00	GEOFOAM 924
9411	430948.42	2885270.18	126+16.01	-66.00	GEOFOAM 924
9412	430946.44	2885326.29	126+70.79	-62.68	GEOFOAM 924
9413	430854,50	2885329,60	126+72,58	29,30	GEOFOAM 924
9414	430849.61	2885193.68	125+36.01	30.00	GEOFOAM 924
9415	430853.03	2885177.55	125+20.01	26.00	GEOFOAM 924
9416	430856.45	2885161.42	125+04.01	22.00	GEOFOAM 924
9417	430855.85	2885033.36	123+76.01	18.00	GEOFOAM 924
9418	430857.83	2884977.25	123+20.01	14.00	GEOFOAM 924
9419	430860.97	2884953.12	122+96.01	10.00	GEOFOAM 924
9420	430952.70	2885747.45	130+92.00	-62.00	GEOFOAM 924
9421	430957.76	2885811.38	131+56.00	-66.00	GEOFOAM 924
9422	430962.42	2885851.30	131+96.00	-70.00	GEOFOAM 924
9423	430963.07	2885891.30	132+36.00	-70.00	GEOFOAM 924
9424	430959.34	2885907.36	132+52.00	-66.00	GEOFOAM 924
9425	430956.00	2885947.42	132+92.00	-62.00	GEOFOAM 924
9426	430952.79	2885995.48	133+40.00	-58.00	GEOFOAM 924
9427	430949.85	2886059.54	134+04.00	-54.00	GEOFOAM 924
9428	430946.24	2886083.60	134+28.00	-50.00	GEOFOAM 924
9429	430934.64	2886107.80	134+52.00	-38.00	GEOFOAM 924
9430	430930.91	2886123,86	134+68.00	-34,00	GEOFOAM 924
9431	430866.91	2886124.92	134+68.00	30.00	GEOFOAM 924
9432	430866.78	2886116.92	134+60.00	30.00	GEOFOAM 924
9433	430870.65	2886108.85	134+52.00	26.00	GEOFOAM 924
9434	430874.52	2886100.79	134+44.00	22.00	GEOFOAM 924
9435	430871.22	2885900.81	132+44.00	22.00	GEOFOAM 924
9436	430865.50	2885796.89	131+40.00	26.00	GEOFOAM 924
9437	430864.71	2885748.90	130+92.00	26.00	GEOFOAM 924

Geofoam Elevation 924-927					
Point	Northing	Easting	Station	Offset	Desc
9438	430910.83	2885087.41	124+32.01	-35.00	GEOFOAM 927
9439	430916.26	2885127.24	124+72.01	-39.00	GEOFOAM 927
9440	430932.83	2885142.66	124+88.01	-55.00	GEOFOAM 927
9441	430938.84	2885198.48	125+44.01	-59.00	GEOFOAM 927
9442	430941.14	2885262.44	126+08.01	-59.00	GEOFOAM 927
9443	430939.44	2885326.54	126+70.93	-55.69	GEOFOAM 927
9444	430859.50	2885329.42	126+72.49	24.30	GEOFOAM 927
9445	430854,61	2885193,50	125+36,01	25,00	GEOFOAM 927
9446	430858.03	2885177.37	125+20.01	21.00	GEOFOAM 927
9447	430861.45	2885161.24	125+04.01	17.00	GEOFOAM 927
9448	430862.86	2885089.14	124+32.01	13.00	GEOFOAM 927
9449	430941.70	2885747.63	130+92.00	-51.00	GEOFOAM 927
9450	430946.49	2885795.56	131+40.00	-55.00	GEOFOAM 927
9451	430951.02	2885827.49	131+72.00	-59.00	GEOFOAM 927
9452	430952.21	2885899.48	132+44.00	-59.00	GEOFOAM 927
9453	430948.60	2885923.54	132+68.00	-55.00	GEOFOAM 927
9454	430945.13	2885955.60	133+00.00	-51.00	GEOFOAM 927
9455	430929.66	2885987.86	133+32.00	-35.00	GEOFOAM 927
9456	430885.67	2885988.59	133+32.00	9.00	GEOFOAM 927
9457	430881.54	2885980.66	133+24.00	13.00	GEOFOAM 927
9458	430876.22	2885900.73	132+44.00	17.00	GEOFOAM 927
9459	430870.50	2885796.81	131+40.00	21.00	GEOFOAM 927
9460	430869.71	2885748.82	130+92.00	21.00	GEOFOAM 927

Geofoam Elevation 927-930					
Point	Northing	Easting	Station	Offset	Desc
9461	430915.31	2885295.39	126+39.38	-32.07	GEOFOAM 930
9462	430916.46	2885327.37	126+71.38	-32.69	GEOFOAM 930
9463	430868.49	2885329.09	126+72.31	15.30	GEOFOAM 930
9464	430867.34	2885297.11	126+40.32	15.92	GEOFOAM 930
9465	430926.70	2885747.88	130+92.00	-36.00	GEOFOAM 930
9466	430927.23	2885779.87	131+24.00	-36.00	GEOFOAM 930
9467	430879.24	2885780.67	131+24.00	12.00	GEOFOAM 930
9468	430878.71	2885748.67	130+92.00	12.00	GEOFOAM 930

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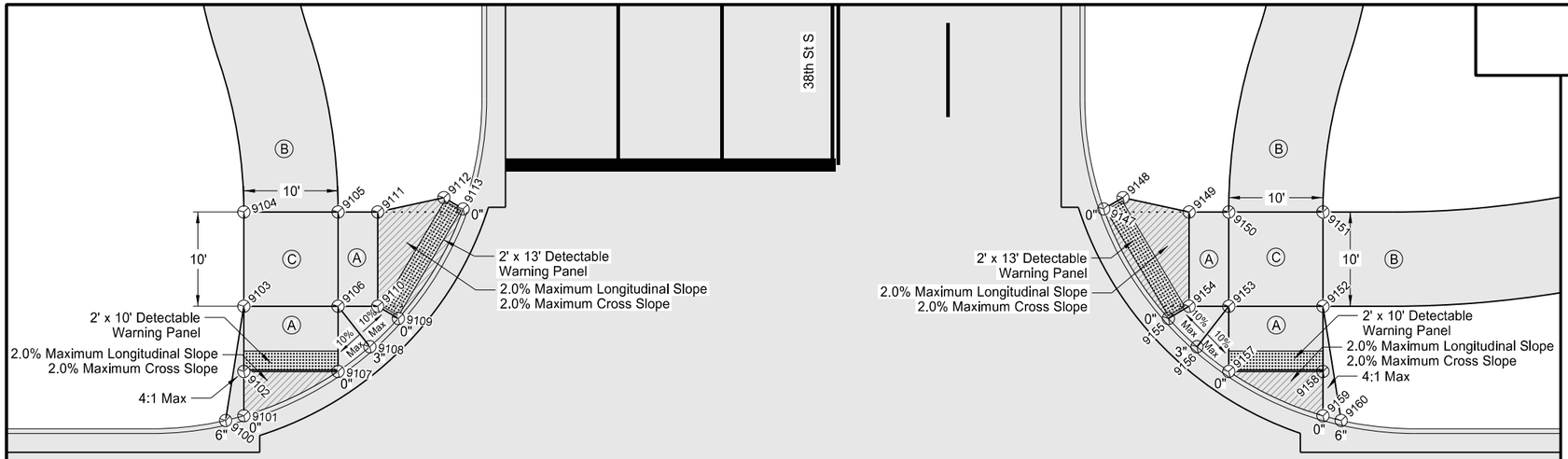
64th Avenue South - 38th St S to 33rd St S

Geofoam Points
Elevation 924, 927, & 930

64th Avenue South

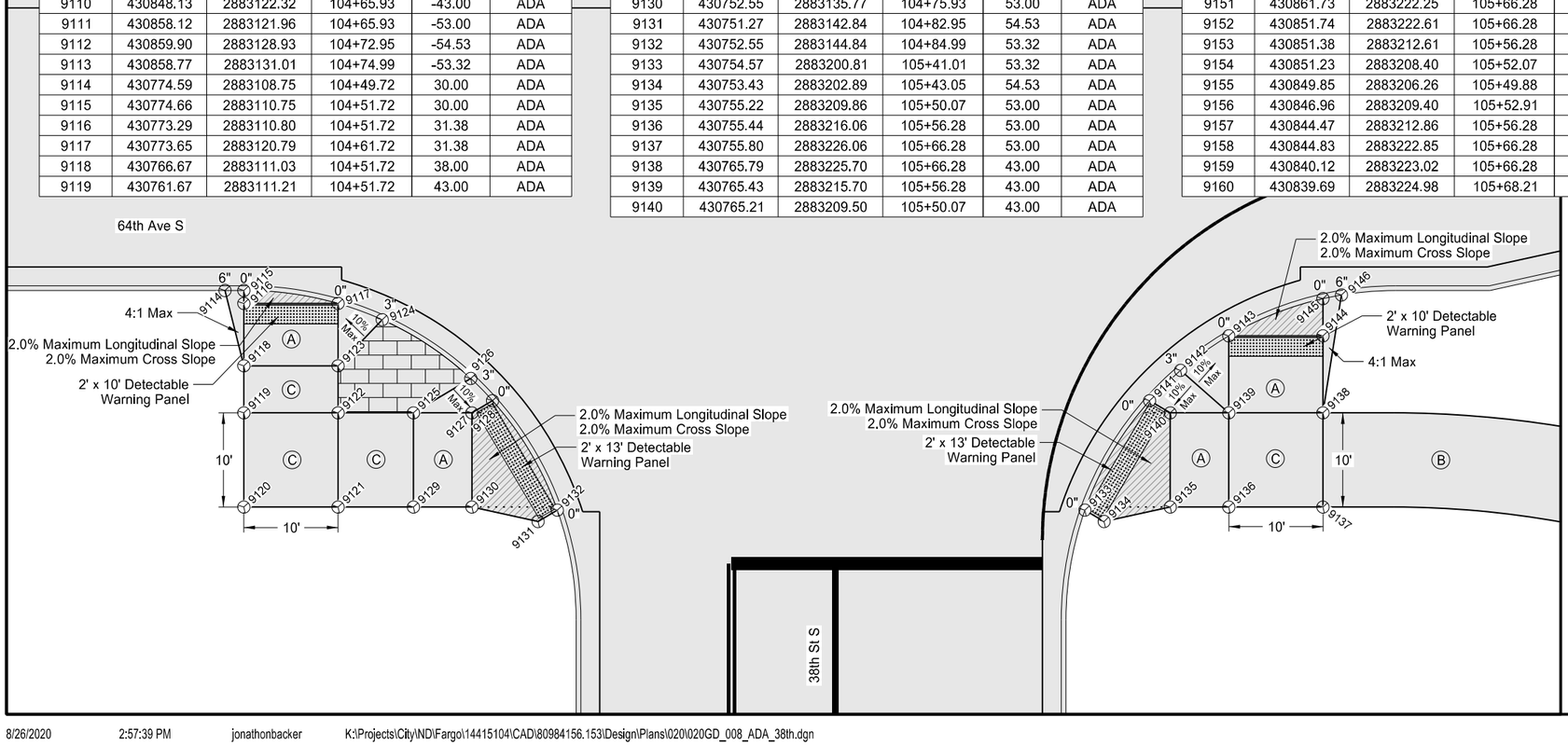
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	8



Point	Northing	Easting	Station	Offset	Desc
9100	430835.43	2883106.62	104+49.79	-30.88	ADA
9101	430836.00	2883108.54	104+51.72	-31.38	ADA
9102	430840.71	2883108.37	104+51.72	-36.09	ADA
9103	430847.62	2883108.12	104+51.72	-43.00	ADA
9104	430857.61	2883107.76	104+51.72	-53.00	ADA
9105	430857.97	2883117.76	104+61.72	-53.00	ADA
9106	430847.98	2883118.12	104+61.72	-43.00	ADA
9107	430841.07	2883118.36	104+61.72	-36.09	ADA
9108	430843.80	2883121.64	104+65.09	-38.70	ADA
9109	430846.91	2883124.56	104+68.12	-41.70	ADA
9110	430848.13	2883122.32	104+65.93	-43.00	ADA
9111	430858.12	2883121.96	104+65.93	-53.00	ADA
9112	430859.90	2883128.93	104+72.95	-54.53	ADA
9113	430858.77	2883131.01	104+74.99	-53.32	ADA
9114	430774.59	2883108.75	104+49.72	30.00	ADA
9115	430774.66	2883110.75	104+51.72	30.00	ADA
9116	430773.29	2883110.80	104+51.72	31.38	ADA
9117	430773.65	2883120.79	104+61.72	31.38	ADA
9118	430766.67	2883111.03	104+51.72	38.00	ADA
9119	430761.67	2883111.21	104+51.72	43.00	ADA

Point	Northing	Easting	Station	Offset	Desc
9120	430751.68	2883111.57	104+51.72	53.00	ADA
9121	430752.04	2883121.57	104+61.72	53.00	ADA
9122	430762.03	2883121.21	104+61.72	43.00	ADA
9123	430767.03	2883121.03	104+61.72	38.00	ADA
9124	430772.09	2883125.54	104+66.41	33.10	ADA
9125	430762.32	2883129.20	104+69.72	43.00	ADA
9126	430766.19	2883135.16	104+75.81	39.35	ADA
9127	430762.54	2883135.41	104+75.93	43.00	ADA
9128	430763.92	2883137.55	104+78.12	41.70	ADA
9129	430752.32	2883129.56	104+69.72	53.00	ADA
9130	430752.55	2883135.77	104+75.93	53.00	ADA
9131	430751.27	2883142.84	104+82.95	54.53	ADA
9132	430752.55	2883144.84	104+84.99	53.32	ADA
9133	430754.57	2883200.81	105+41.01	53.32	ADA
9134	430753.43	2883202.89	105+43.05	54.53	ADA
9135	430755.22	2883209.86	105+50.07	53.00	ADA
9136	430755.44	2883216.06	105+56.28	53.00	ADA
9137	430755.80	2883226.06	105+66.28	53.00	ADA
9138	430765.79	2883225.70	105+66.28	43.00	ADA
9139	430765.43	2883215.70	105+56.28	43.00	ADA
9140	430765.21	2883209.50	105+50.07	43.00	ADA

Point	Northing	Easting	Station	Offset	Desc
9141	430766.42	2883207.26	105+47.88	41.70	ADA
9142	430769.77	2883210.43	105+51.16	38.48	ADA
9143	430773.61	2883215.41	105+56.28	34.82	ADA
9144	430773.97	2883225.40	105+66.28	34.82	ADA
9145	430777.92	2883225.26	105+66.28	30.86	ADA
9146	430778.38	2883227.21	105+68.24	30.48	ADA
9147	430861.22	2883198.98	105+43.01	-53.32	ADA
9148	430862.50	2883200.97	105+45.05	-54.53	ADA
9149	430861.22	2883208.04	105+52.07	-53.00	ADA
9150	430861.37	2883212.25	105+56.28	-53.00	ADA
9151	430861.73	2883222.25	105+66.28	-53.00	ADA
9152	430851.74	2883222.61	105+66.28	-43.00	ADA
9153	430851.38	2883212.61	105+56.28	-43.00	ADA
9154	430851.23	2883208.40	105+52.07	-43.00	ADA
9155	430849.85	2883206.26	105+49.88	-41.70	ADA
9156	430846.96	2883209.40	105+52.91	-38.70	ADA
9157	430844.47	2883212.86	105+56.28	-36.09	ADA
9158	430844.83	2883222.85	105+66.28	-36.09	ADA
9159	430840.12	2883223.02	105+66.28	-31.38	ADA
9160	430839.69	2883224.98	105+68.21	-30.88	ADA



SPEC CODE BID ITEM QTY UNIT

750 2115 DETECTABLE WARNING PANELS
- 4 - 2' x 10' Detectable Warning Panels 80 SF
- 4 - 2' x 13' Detectable Warning Panels 104 SF

Ramp - 6" Depth
8.33% Maximum Longitudinal Slope
7.7% Preferred Longitudinal Slope
(A) 5% Minimum Longitudinal Slope
2% Maximum Cross Slope
1.5% Preferred Cross Slope
15' Maximum Ramp Length

Shared Use Path - 5" Depth
5% Maximum Longitudinal Slope
(B) 4.7% Preferred Longitudinal Slope
2% Maximum Cross Slope
1.5% Preferred Cross Slope

Landing - 5" Depth
2% Maximum Longitudinal Slope
(C) 2% Maximum Cross Slope
1.5% Preferred All Directions
4'x4' Minimum, Match Width of Shared Use Path

Notes:
1. Dimensions shown may vary from actual. Field adjust if maximum slopes cannot be met with dimensions shown.
2. See Section 20 Sheets for more Sidewalk and ADA Details.
3. See Section 82 Sheets for Shared-Use Path and Sidewalk points.
4. All form grades to be approved by engineer prior to placing concrete.

N

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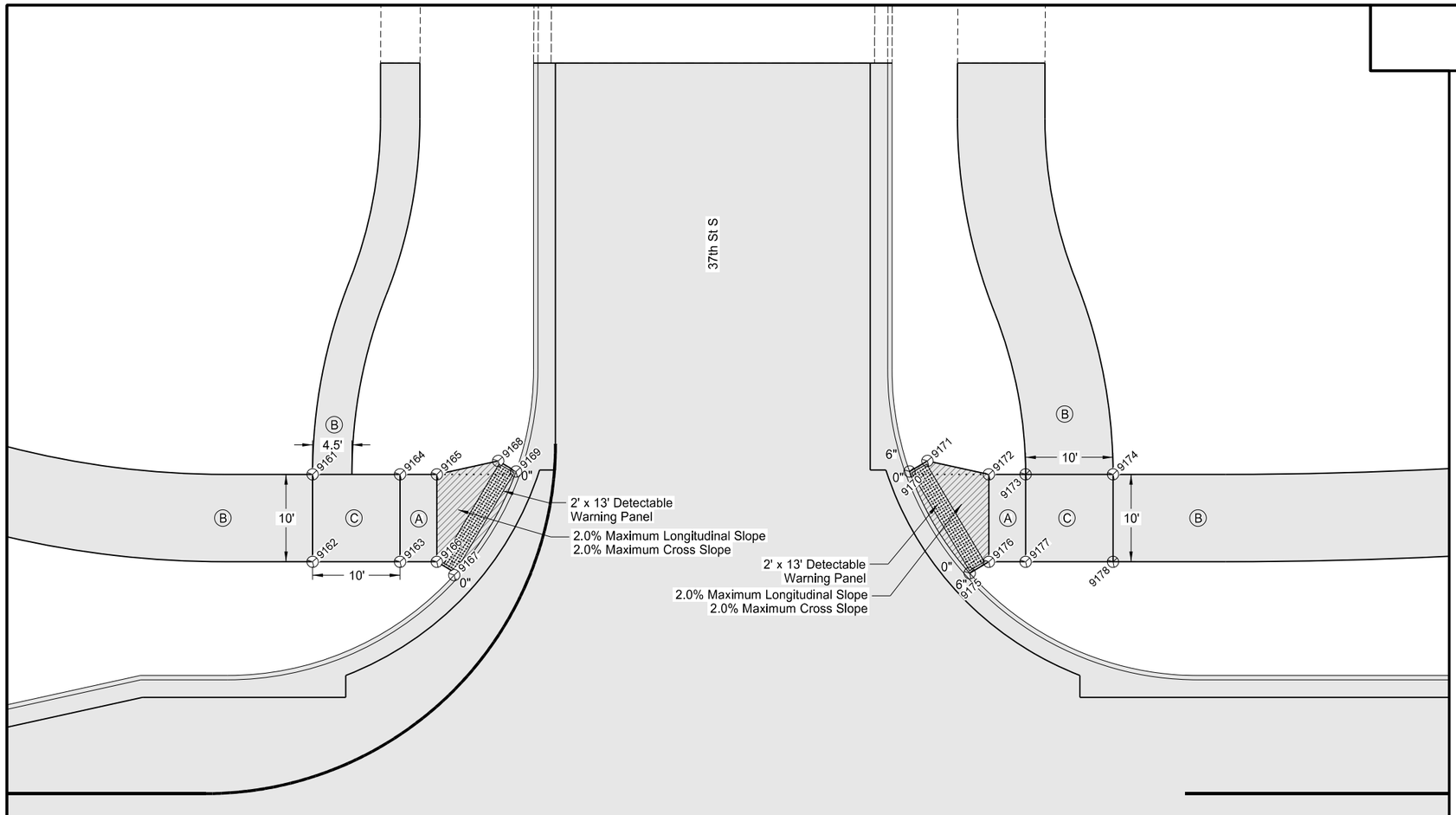
64th Avenue South - 38th St S to 33rd St S

Survey Data Layout
ADA Ramp Details

38th Street South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	9



Point	Northing	Easting	Station	Offset	Desc
9161	430887.06	2883926.23	112+70.72	-53.00	ADA
9162	430877.07	2883926.59	112+70.72	-43.00	ADA
9163	430877.43	2883936.59	112+80.72	-43.00	ADA
9164	430887.42	2883936.23	112+80.72	-53.00	ADA
9165	430887.57	2883940.43	112+84.93	-53.00	ADA
9166	430877.58	2883940.79	112+84.93	-43.00	ADA
9167	430876.13	2883942.84	112+86.92	-41.48	ADA
9168	430889.35	2883947.40	112+91.95	-54.53	ADA
9169	430888.22	2883949.48	112+93.99	-53.32	ADA
9170	430889.84	2883994.46	113+39.01	-53.32	ADA
9171	430891.12	2883996.46	113+41.05	-54.53	ADA
9172	430889.84	2884003.53	113+48.07	-53.00	ADA
9173	430889.99	2884007.74	113+52.28	-53.00	ADA
9174	430890.35	2884017.73	113+62.28	-53.00	ADA
9175	430878.47	2884001.75	113+45.88	-41.70	ADA
9176	430879.85	2884003.89	113+48.07	-43.00	ADA
9177	430880.00	2884008.10	113+52.28	-43.00	ADA
9178	430880.36	2884018.09	113+62.28	-43.00	ADA

SPEC CODE BID ITEM — QTY UNIT

750 2115 DETECTABLE WARNING PANELS
2 - 2' x 13' Detectable Warning Panels — 52 SF

Ramp - 6" Depth
8.33% Maximum Longitudinal Slope
7.7% Preferred Longitudinal Slope
(A) 5% Minimum Longitudinal Slope
2% Maximum Cross Slope
1.5% Preferred Cross Slope
15' Maximum Ramp Length

Shared Use Path - 5" Depth
5% Maximum Longitudinal Slope
(B) 4.7% Preferred Longitudinal Slope
2% Maximum Cross Slope
1.5% Preferred Cross Slope

Landing - 5" Depth
2% Maximum Longitudinal Slope
(C) 2% Maximum Cross Slope
1.5% Preferred All Directions
4'x4' Minimum, Match Width of Shared Use Path

Notes:
1. Dimensions shown may vary from actual. Field adjust if maximum slopes cannot be met with dimensions shown.
2. See Section 20 Sheets for more Sidewalk and ADA Details.
3. See Section 82 Sheets for Shared-Use Path and Sidewalk points.
4. All form grades to be approved by engineer prior to placing concrete.

N

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64th Avenue South - 38th St S to 33rd St S

Survey Data Layout
ADA Ramp Details

37th Street South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	10

SPEC	CODE	BID ITEM	QTY	UNIT
203	0116	TOPSOIL MANDATORY BORROW AREA Mandatory Borrow Site (East)	3,993	CY
251	0300	SEEDING CLASS III Mandatory Borrow Site (East)	4.95	ACRE
253	0201	HYDRAULIC MULCH Mandatory Borrow Site (East)	4.95	ACRE

Sec 33 T-139-N R-49-W

Sec 34 T-139-N R-49-W

Sec 35 T-139-N R-49-W

Designated Haul Route for East Embankment

52nd Avenue South

38th Street South

Potential Haul Route (Contractor Must Obtain Approval From Local Jurisdiction) Frontier

31st Street South

No Hauling Allowed

25th Street South

Designated Haul Route for East Embankment

Drain 27

Sec 4 T-138-N R-49-W

Access Route West of I-29

Designated Haul Route for East Embankment

Sec 3 T-138-N R-49-W

Sec 2 T-138-N R-49-W

Potential Haul Route (Contractor Must Obtain Approval From Local Jurisdiction)

45th Street South

No Hauling Allowed Until Project is Substantially Completed. Anticipated Substantial Completion Date is 9/1/2021

38th Street South

Frontage Road

Interstate 29

No Hauling Allowed

Master Stormwater Pond

Stablized Construction Access

Topsoil Mandatory Borrow Area (6" Depth)

City of Fargo Project BN-20-L1

Drain 53

Designated Haul Route for East Embankment

Mandatory Borrow Stockpile Site (East)

64th Avenue South

Mandatory Borrow Stockpile Site (West)

Designated Haul Route for West Embankment

Stablized Construction Access

Sec 9 T-138-N R-49-W

Mandatory Borrow Stockpile Site (East)

Interstate 29 Southbound

Interstate 29 Northbound

Topsoil Mandatory Borrow Area (6" Depth)
Seeding Type III (4.95 Acres)
Hydraulic Mulch (4.95 Acres)

33rd St S

64th Ave S

Sec 10 T-138-N R-49-W

Sec 11 T-138-N R-49-W

N

LEGEND

- Access Route West of I-29
- West Embankment Designated Haul Route
- East Embankment Designated Haul Route
- Stabilized Construction Access
- Potential Haul Route (Contractor Must Obtain Approval)
- No Hauling Allowed

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64th Avenue South - 38th St S to 33rd St S

Borrow Area

64th Avenue South

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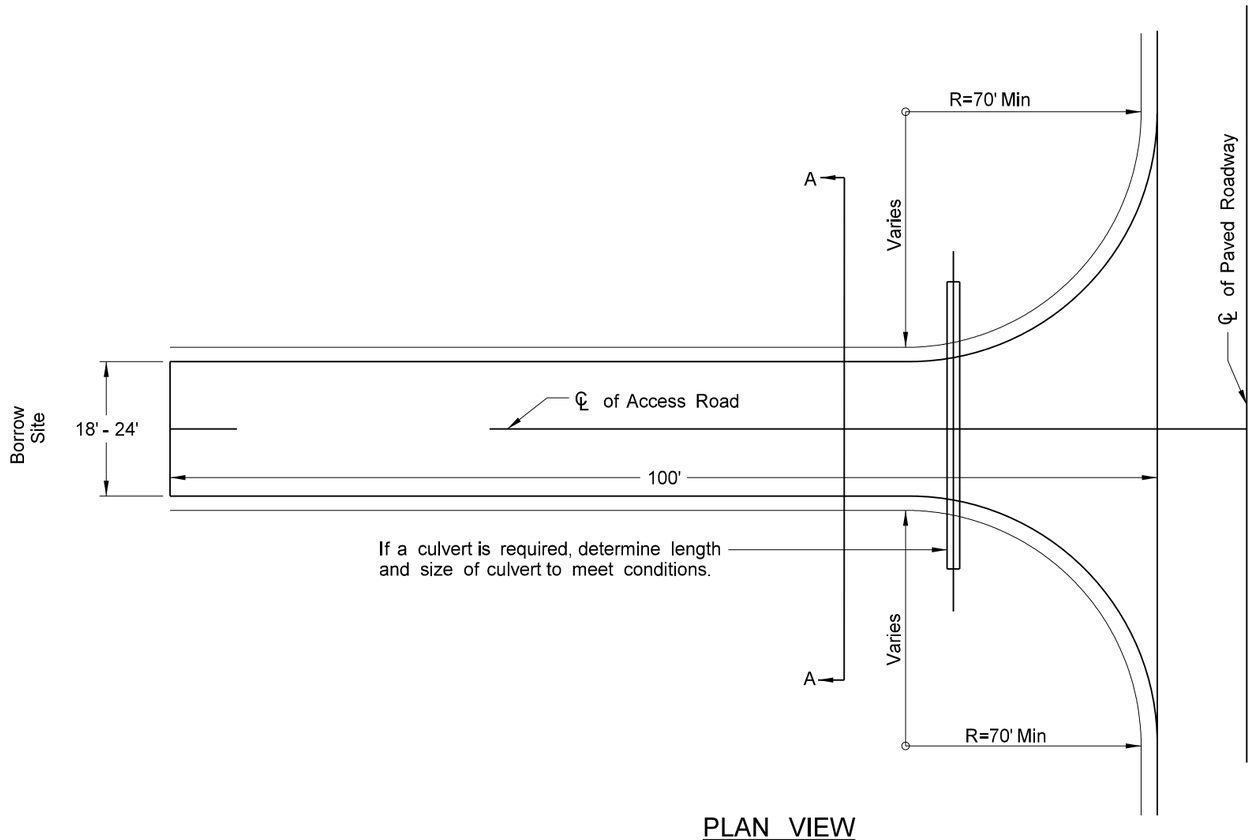
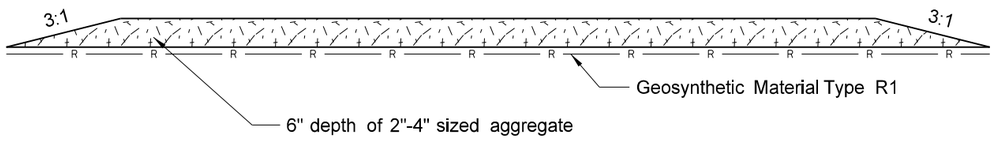
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	11

SPEC CODE	BID ITEM	QTY	UNIT
265 0100	STABILIZED CONSTRUCTION ACCESS		
	64th Avenue South	2	EA
265 0101	REMOVE STABILIZED CONSTRUCTION ACCESS		
	64th Avenue South	2	EA

Note: Include all costs associated with the installation and removal of the Stabilized Construction Access in the bit items "Stabilized Construction Access" and "Remove Stabilized Construction Access"



PLAN VIEW



A - A Cross Section

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64th Avenue South - 38th St S to 33rd St S

Stabilized Construction Access Detail

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	12

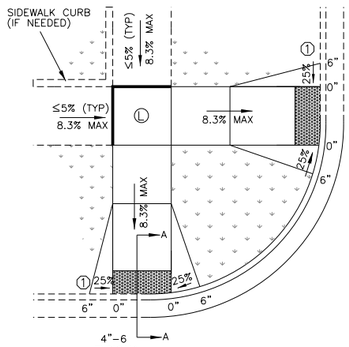
SIDEWALK RAMPS

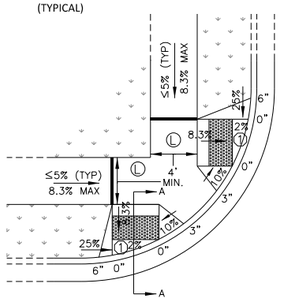
TYPE A : GRASS BOULEVARD

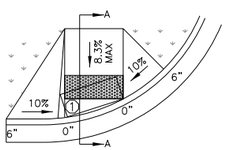
TYPE B : SIDEWALK ADJACENT TO STREET CURB

TYPE C : CONTINUOUS CONCRETE IN BOULEVARD (TYPICALLY DOWNTOWN AREA)

TYPE A





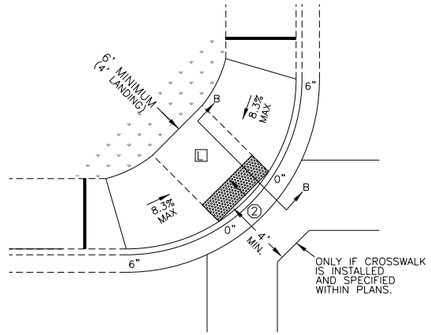


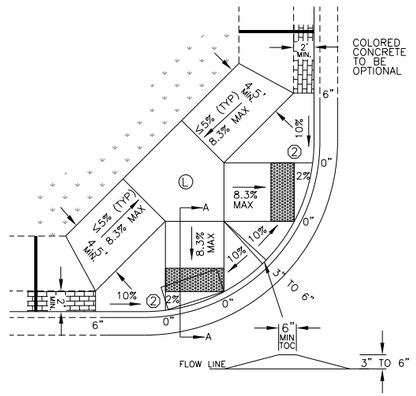
ALTERNATIVE DWP

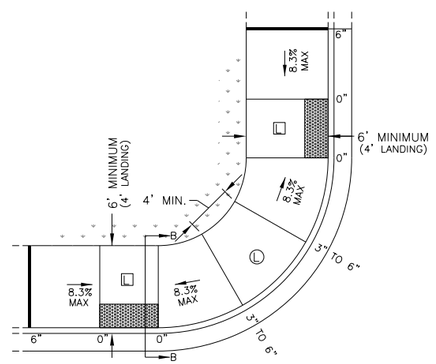
① 5' MAX, 3" MAX — NOT CONTINOUS WALK SURFACE IN BLVD (GRASS BLVD)

② 2' MAX, 3" MAX — CONTINOUS WALK SURFACE IN BLVD (CONCRETE BLVD)

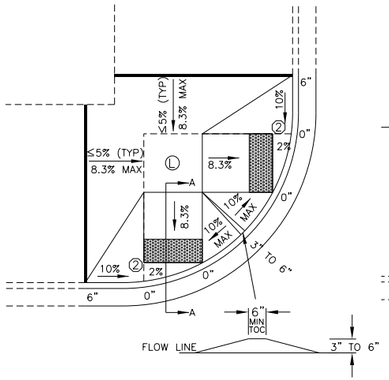
TYPE B

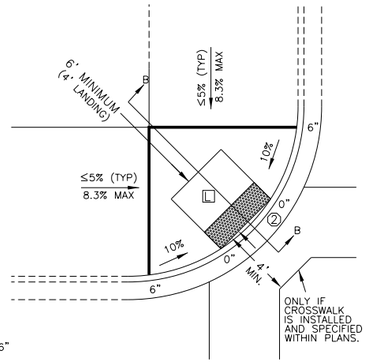


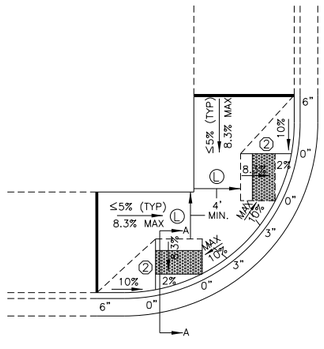


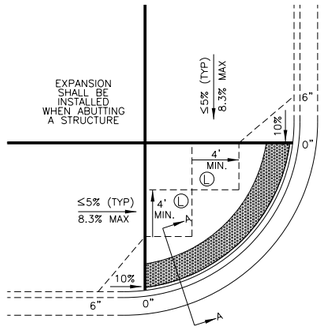


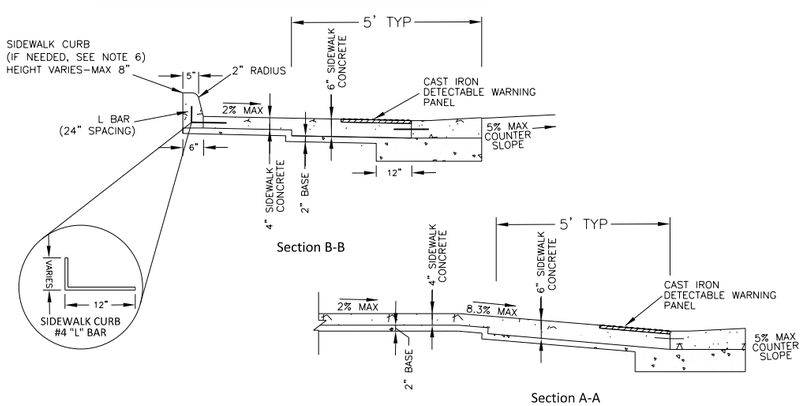
TYPE C











SIDEWALK RAMP CROSS-SECTIONS

LEGEND:

- DETECTABLE WARNING PANEL UNPAINTED CAST IRON
- GRASS
- COLORED BRICK CONCRETE (MIN 2')
- Ⓤ UPPER LANDING 2% MAX
- Ⓛ LOWER LANDING 2% MAX
- 0", 3", 4" OR 6" CURB HEIGHT
- 1/2" EXPANSION (ALL EXPANSION SHALL BE SEALED WITH HOT POUR)

20:1=5% 12:1=8.3% 10:1=10% 4:1=25%

NOTES:

1. RAMP WIDTH IS DEFINED AS THE USEABLE PORTION OF THE RAMP, EXCLUDING FLARES IF USED.

   CURB RAMP WIDTH SHOULD MATCH THE EXISTING SIDEWALK WIDTH. 4' WIDTH MINIMUM.

   RAMP WIDTH FOR SHARED–USE PATHS SHOULD MATCH THE EXISTING SHARED USE PATH WIDTH.

2. RAMP LENGTH SHALL BE MAXIMUM OF 15'.

   ANY PORTIONS OF SIDEWALK BETWEEN THE DETECTABLE WARNING PANELS AND THE CURB SHALL HAVE A MAX 2% LONGITUDINAL GRADE.

3. LANDINGS SHALL BE A MINIMUM OF 4' X 4' AND SHALL HAVE A MAX 2% SLOPE IN ANY DIRECTION. LANDINGS ARE DESIRABLY 5' X 5' OR LARGER.

4. DETECTABLE WARNING PANELS SHALL MATCH THE RAMP WIDTH. RADIAL PANELS MAY ALSO BE USED.THE DETECTABLE WARNING PANEL MAY BE LOCATED WITHIN THE LOWER LANDING.

5. THE PEDESTRIAN ACCESS ROUTE SHALL BE CONTINUOUS 4' MIN. WIDTH. MAX 2% CROSS SLOPE APPLIES TO ALL CONCRETE, EXCLUDING FLARES.

6. LANDSCAPING IS PREFERRED TO MODIFY EXISTING GROUND SLOPE CHANGES AS NEEDED. IF NOT POSSIBLE, SUCH AS ADJACENT BUILDINGS, A VERTICAL CURB MAY BE USED AS SHOWN IN THE DETAIL BELOW. THE CURB WILL BE PAID FOR AT THE UNIT PRICE BID FOR THE ITEM"CURB – TYPE SW" PER LINEAL FOOT.

7. THE MAJORITY OF LINES SHOWN ON DETAILS INDICATE POINT OF DIFFERING GRADE CHANGES. ACTUAL JOINT DIMENSIONS MAY VARY IN FIELD.

8. LONGITUDINAL SLOPE ON SIDEWALK SHALL NOT EXCEED 5%. GENERALLY SIDEWALK GRADE IS ESTABLISHED BY THE ROADWAY GRADE. SIDEWALK SHALL NOT EXCEED 2% CROSS SLOPE.

9. CONCRETE LANDINGS SHALL BE PLACED SEPARATELY AND INSTALLED PRIOR TO ADJACENT ADA RAMPS AND/OR SIDEWALKS. CONCRETE LANDINGS SHALL HAVE A MINIMUM OF 24 HOURS OF CURE TIME PRIOR TO ADJACENT CONCRETE PLACEMENT.

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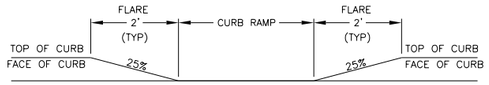
64th Avenue South - 38th St S to 33rd St S

Sidewalk & ADA Detail

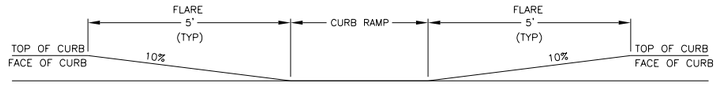
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	13

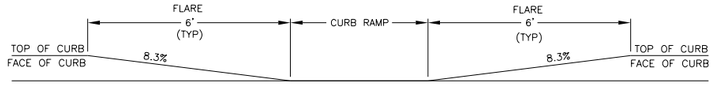
SIDEWALK/BIKETRAIL DETAILS



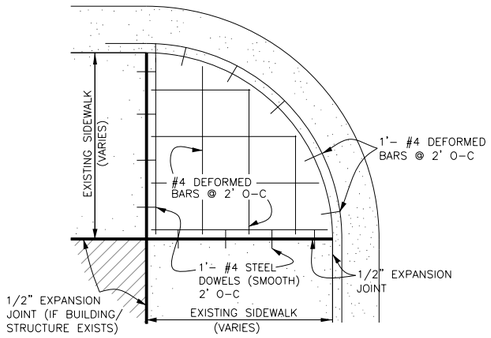
25% FLARES



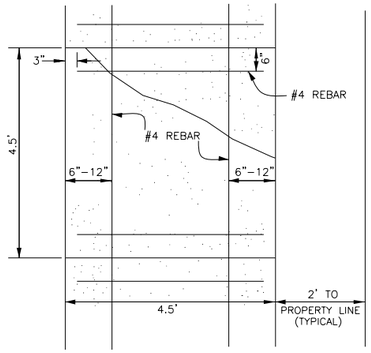
10% FLARES



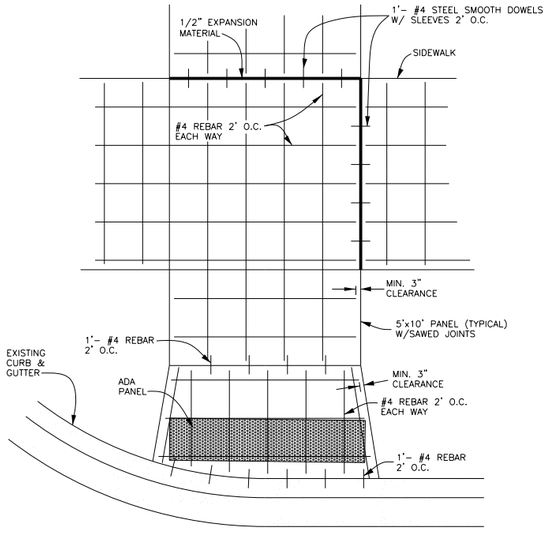
8.3% FLARES



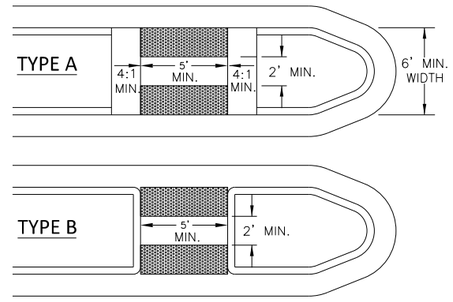
SIDEWALK REINFORCEMENT



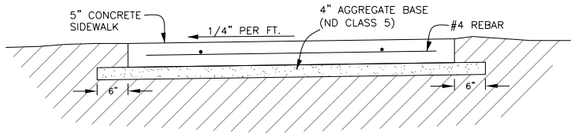
4.5' REINFORCEMENT



10' REINFORCEMENT



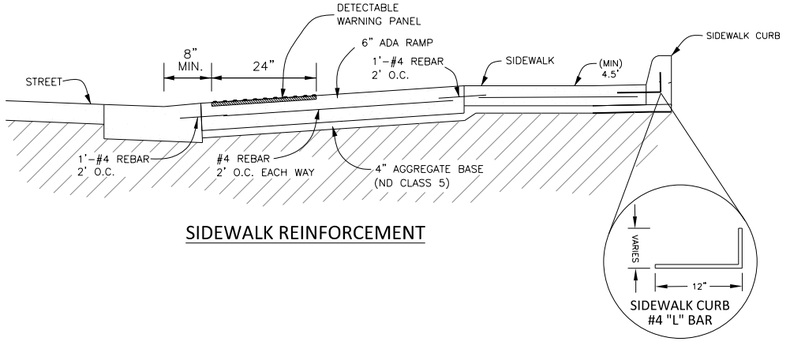
MEDIAN REFUGE ISLANDS (CUT-THROUGH)



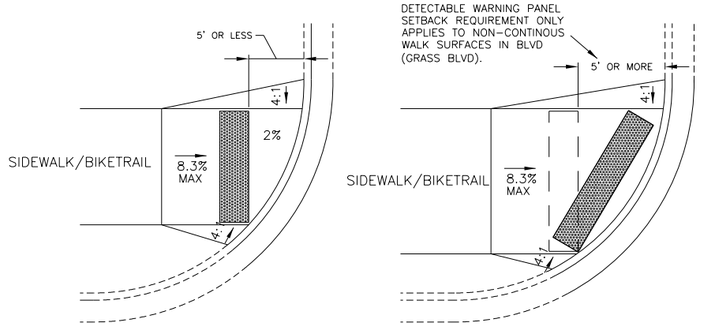
SIDEWALK CROSS-SECTION

SIDEWALK WIDTH	PANELS (L'xW')
6'	5'x6'
8'	4.5'x4'
10'	5'x5'

JOINT DIMENSION



SIDEWALK REINFORCEMENT



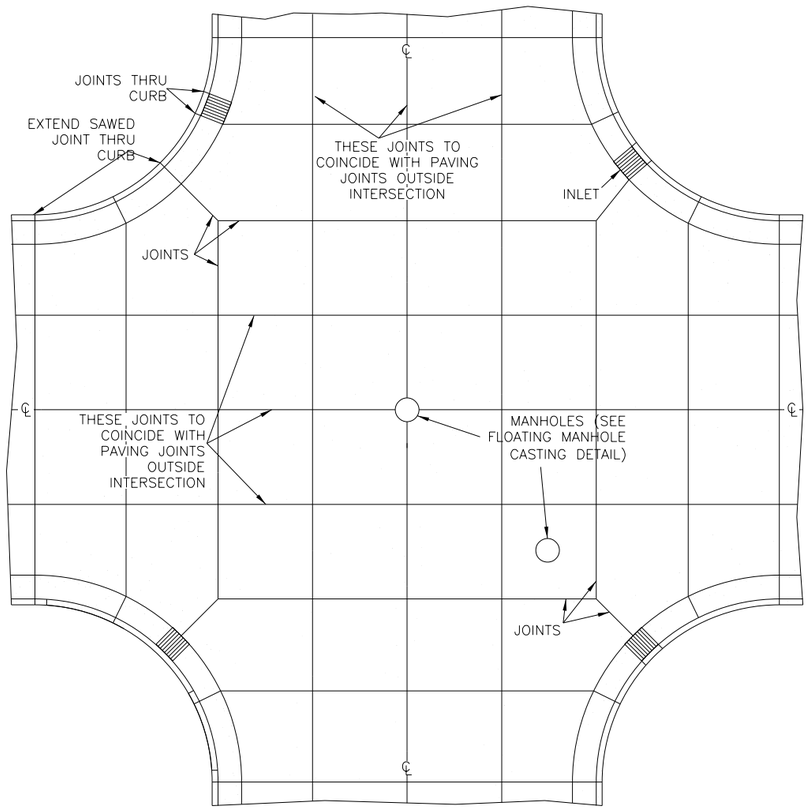
CONCRETE APRON FOR SIDEWALK/BIKETRAIL

64th Avenue South - 38th St S to 33rd St S

Sidewalk & ADA Detail

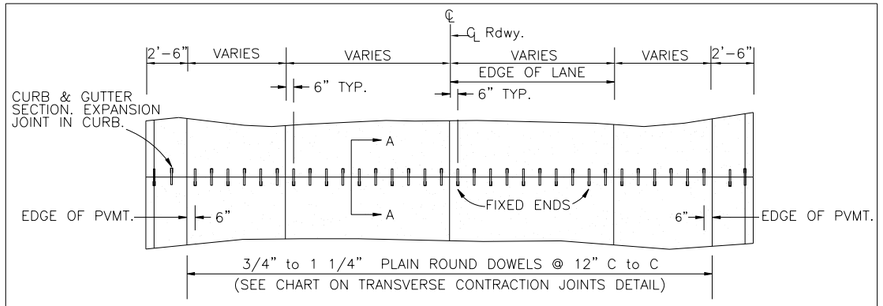
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	14

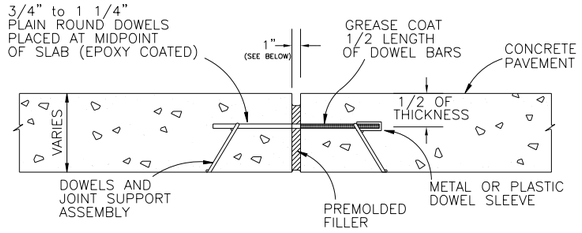


NOTES:
1. ALL DIMENSIONS ARE VARIABLE, SEE JOINTING PLANS AND PROPER CONCRETE PAVEMENT DETAILS FOR DIMENSIONS.
2. CURB AND GUTTER SHALL BE POURED SEPARATE FROM ADJACENT CONCRETE PAVEMENT.

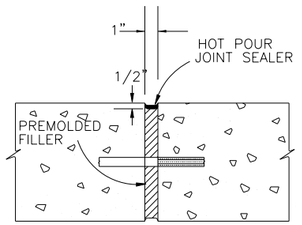
THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.3
	REVISION: 2020	
	TYPICAL CONCRETE INTERSECTION LAYOUT	
	APPROVED:	DATE:



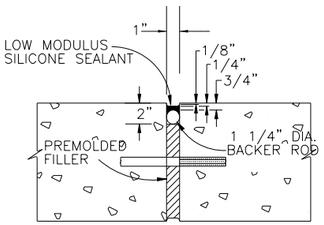
DOWEL BAR ASSEMBLY



SECTION A-A



HOT POUR SEAL
(UNLESS OTHERWISE NOTED)



SILICONE SEAL
(IF SPECIFIED)

NOTES:
1. EXPANSION JOINT LOCATIONS SHOWN ON PLANS.
2. EXPANSION JOINTS MUST BE INSTALLED ACROSS ENTIRE WIDTH OF CONCRETE PAVEMENT.
3. PREMOLDED FILLER MUST CONFORM TO THE DIMENSIONS OF THE TYPE OF CURB.

SECTION NO. 2100	DRAWING NO. 5.4
REV.D. 2012	
EXPANSION JOINT DETAIL	
CITY OF FARGO ENGINEERING DEPARTMENT	
APPROVED	DATE

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64th Avenue South - 38th St S to 33rd St S

Concrete Intersection & Expansion Joint Details

64th Avenue South

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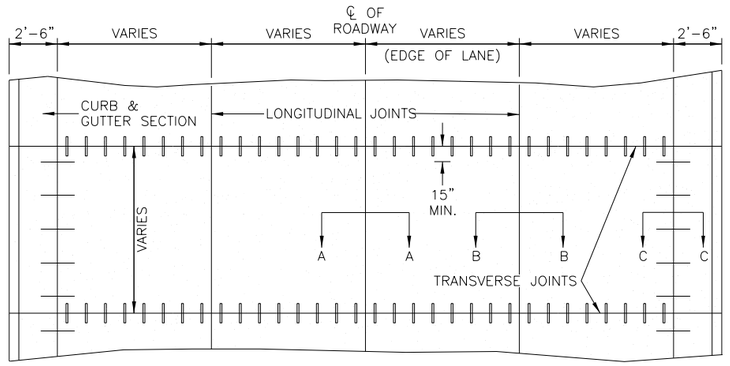
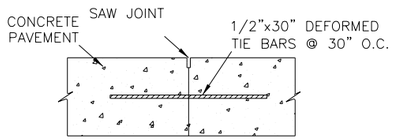
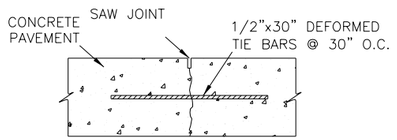
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	15



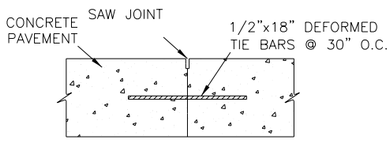
LONGITUDINAL JOINTS



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT



SECTION B-B
SAWED LONGITUDINAL JOINT



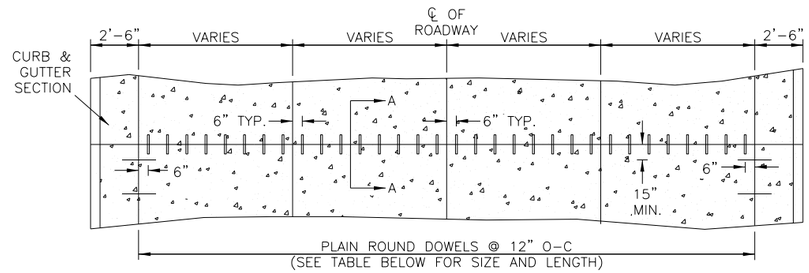
SECTION C-C
LONGITUDINAL CONSTRUCTION JOINT

NOTES:
1. ALL LONGITUDINAL JOINTS SHALL BE TIED
2. SEE SAW JOINT DETAILS
3. WHERE TIE BARS ARE INSTALLED AND LATER STRAIGHTENED, GRADE 40 STEEL SHALL BE USED
4. ALL TIE BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH AASHTO A 775

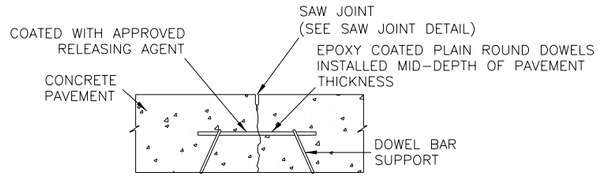
5.05

THE CITY OF Fargo FAR MORE
ENGINEERING DEPARTMENT

SECTION: 2100	DRAWING: 5.10
REVISION: 2019	
LONGITUDINAL JOINTS	
APPROVED:	DATE:



TRANSVERSE CONTRACTION JOINT
DOWEL ASSEMBLY



SECTION A-A
DOWEL ASSEMBLY

DOWELED JOINTS		
PAVEMENT THICKNESS	DOWEL BAR SIZE	TOTAL DOWEL LENGTH
7"	1"	18"
8 – 10"	1-¼"	18"
10.5 – 12"	1-½"	18"
NOTE: ALL DOWELS ARE TO BE SPACED AT 12" O.C.		

NOTE:
1. ALL DOWELS SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A 775, EXCEPT EXPOSED ENDS RESULTING FROM SAW CUTTING OR SHEARING DO NOT NEED TO BE PATCHED.

THE CITY OF Fargo FAR MORE
ENGINEERING DEPARTMENT

SECTION: 2100	DRAWING: 5.06
REVISION: 2019	
TRANSVERSE CONTRACTION JOINTS	
APPROVED:	DATE:

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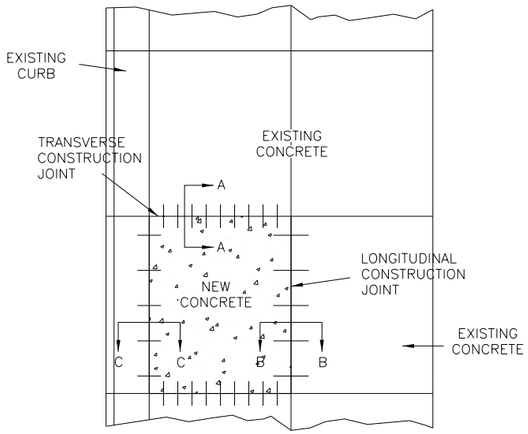
64th Avenue South - 38th St S to 33rd St S

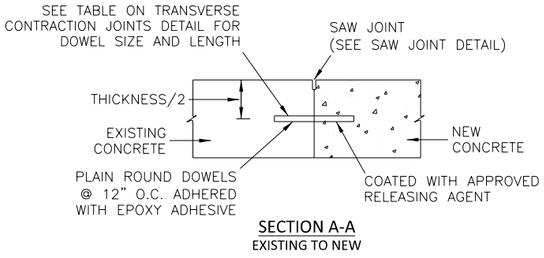
Longitudinal & Transverse Contraction Joint Details

64th Avenue South

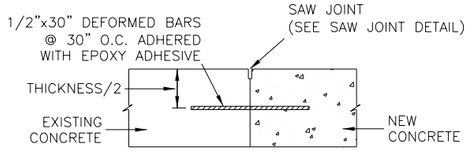
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	16



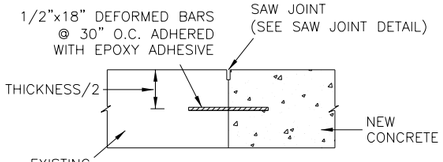
CONSTRUCTION JOINT
EXISTING TO NEW



SECTION A-A
EXISTING TO NEW

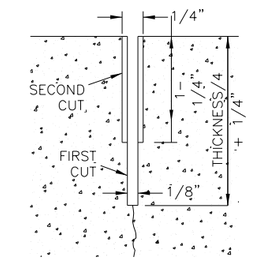


SECTION B-B
EXISTING TO NEW

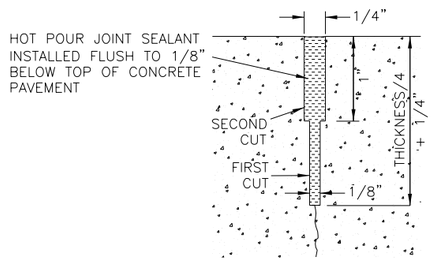


SECTION C-C
EXISTING TO NEW

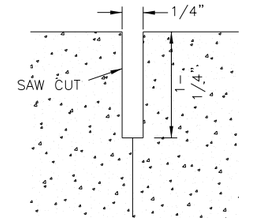
THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.7
	REVISION: 2018	
	CONSTRUCTION JOINT	
	APPROVED:	DATE:



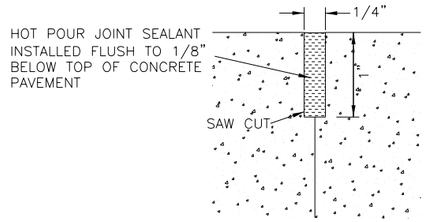
TRANSVERSE SAWED JOINT
(SEE JOINT SEALANT DETAIL)



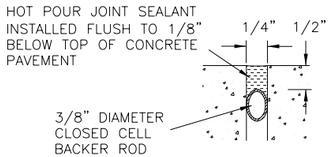
LONGITUDINAL SAWED JOINT



TRANSVERSE CONSTRUCTION JOINT
(SEE JOINT SEALANT DETAIL)



LONGITUDINAL CONSTRUCTION JOINT



JOINT SEALANT DETAIL
ALL TRANSVERSE JOINTS

NOTES:

1. ALL LONGITUDINAL AND TRANSVERSE JOINTS SHALL BE FILLED WITH HOT POUR.
2. TRANSVERSE SAWED JOINTS, BACKER ROD AND JOINT SEALANT SHALL EXTEND THROUGH ENTIRE CURB & GUTTER SECTION.
3. ALL CONCRETE JOINT SEALANT AND BACKER ROD SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.

THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.8
	REVISION: 2019	
	SAW JOINT	
	APPROVED:	DATE:

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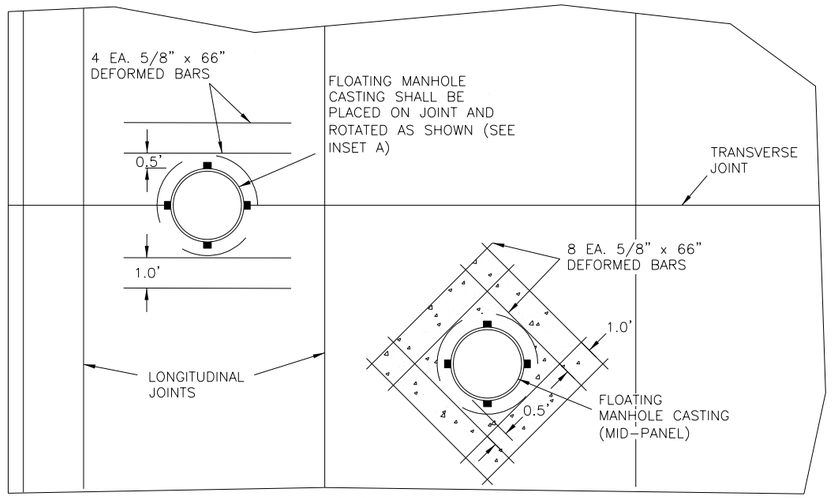
64th Avenue South - 38th St S to 33rd St S

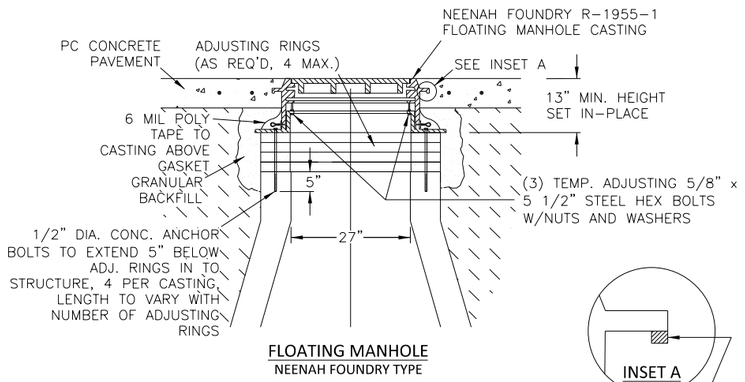
Construction & Saw Joint Details

64th Avenue South

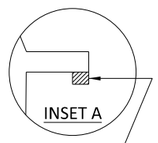
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	17



PLAN VIEW



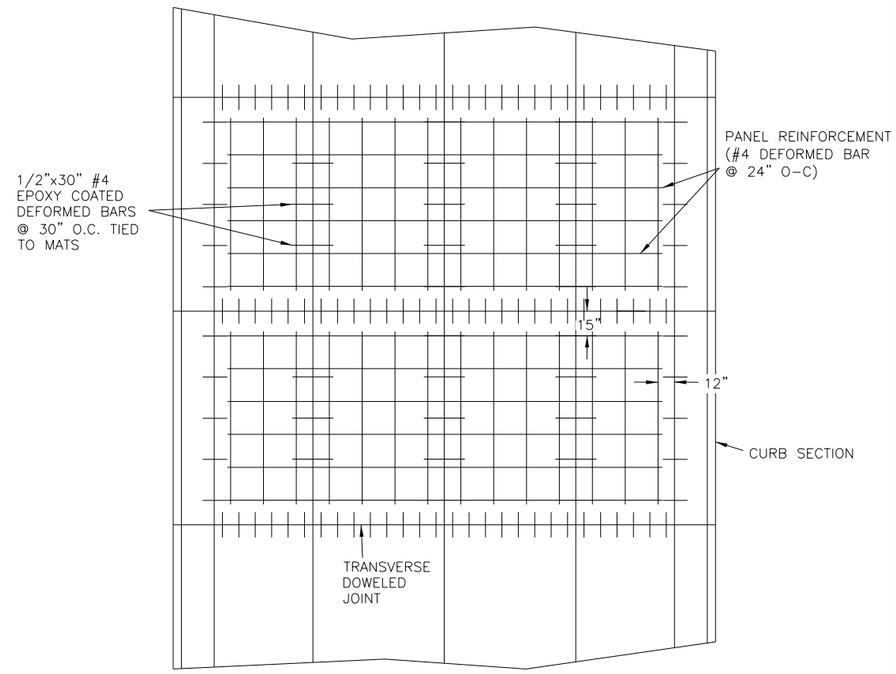
FLOATING MANHOLE
NEENAH FOUNDRY TYPE



REMOVE ALL FOUR (4) LOWER HOOK PORTIONS FROM THE FLANGES WHEN CASTING IS PLACED ON TRANSVERSE JOINTS AND COAT OUTER SURFACE OF CASTING W/APPROVED RELEASING AGENT

NOTES:
1. THIS DETAIL APPLIES TO ALL MANHOLES LOCATED WITHIN THE CONCRETE PAVING SECTION.
2. SEE SECTION 1200 AND 1500 FOR CASTING LID TYPES.

THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.10
	REVISION: 2019	
	FLOATING MANHOLE CASTING	
	APPROVED:	DATE:



NOTES:
1. AREAS FOR REINFORCEMENT SHALL BE DETERMINED BY THE ENGINEER USING THE PLAN SHEETS AS A GUIDELINE. PAYMENT FOR REINFORCEMENT SHALL BE INCIDENTAL TO THE PRICE OF THE CONCRETE PAVEMENT.
2. REBAR MATS SHALL BE SECURED FROM HORIZONTAL MOVEMENT AND SUPPORTED BY CHAIRS AT THE MID-DEPTH POINT OF THE SLAB.
3. REBAR SHALL STOP WITHIN 15" OF THE DOWELED CONTRACTION JOINT.

THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.11
	REVISION: 20--	
	REINFORCEMENT DETAIL	
	APPROVED:	DATE:

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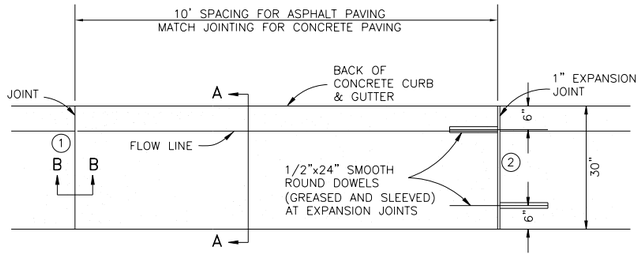
64th Avenue South - 38th St S to 33rd St S

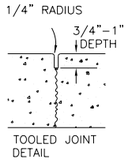
Manhole Casting & Trench Reinforcement Details

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	18



CURB & GUTTER PLAN



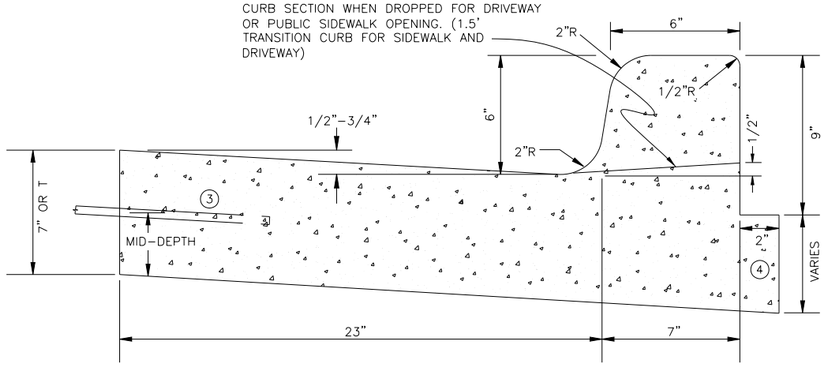
SECTION B–B

① A. ASPHALT PAVING: SAW CUT OR TOOLED JOINTS AT 10' SPACINGS

B. CONCRETE PAVING: SAW CUT JOINTS TO MATCH CONCRETE PAVEMENT JOINT SPACINGS. SEE SAW CUT DETAIL.

② PLACE 1" EXPANSION JOINTS AT P.C.'S AND AT 150' MAX. SPACINGS FOR ASPHALT PAVING

CURB SECTION WHEN DROPPED FOR DRIVEWAY OR PUBLIC SIDEWALK OPENING. (1.5' TRANSITION CURB FOR SIDEWALK AND DRIVEWAY)



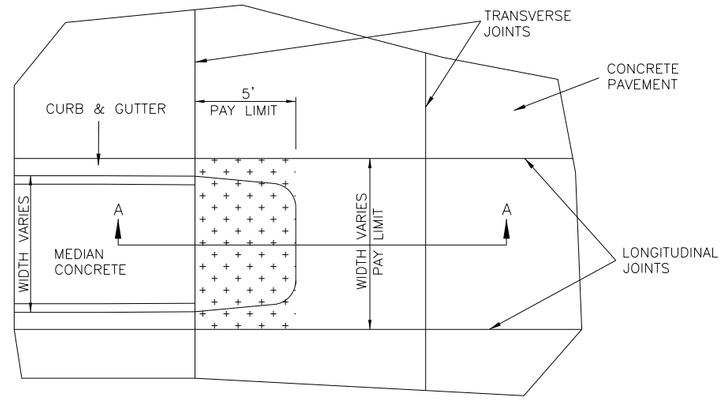
SECTION A–A

③ 1/2"x18" DEFORMED BARS AT 30" O.C. REQUIRED WHEN ADJOINING CONCRETE PAVEMENT

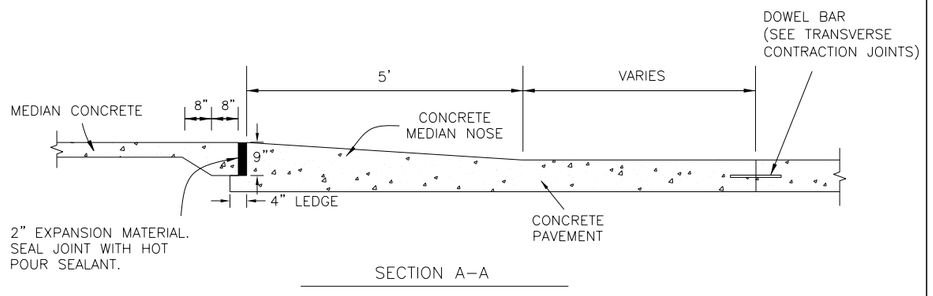
④ 2" LEDGE REQUIRED WHEN ADJOINING DRIVEWAYS, MEDIAN CONCRETE, OR SIDEWALKS.

NOTES:
1. DIMENSION T SHALL MATCH THE THICKNESS OF THE ADJOINING CONCRETE PAVEMENT
2. WHEN OUTFLOW CURB IS SPECIFIED SLOPE WILL BE 1/4" PER FOOT

THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.14
	REVISION: 20--	
	STANDARD (TYPE II) CURB & GUTTER	
	APPROVED:	DATE:



CONCRETE MEDIAN NOSE DETAIL



SECTION A–A

NOTE:
PAID AS "MEDIAN NOSE – CONCRETE"

THE CITY OF Fargo FAR MORE ENGINEERING DEPARTMENT	SECTION: 2100	DRAWING: 5.16
	REVISION: 20--	
	CONCRETE MEDIAN NOSE DETAIL	
	APPROVED:	DATE:

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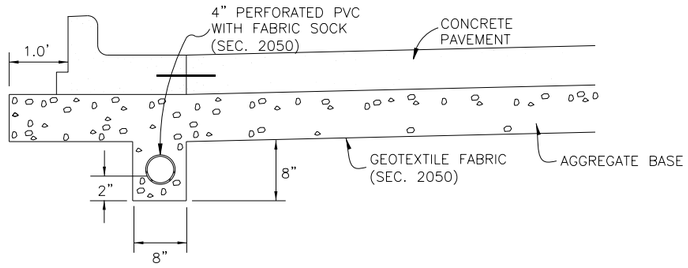
64th Avenue South - 38th St S to 33rd St S

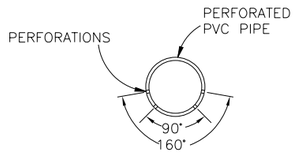
Curb & Gutter & Median Nose Details

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	19



EDGE DRAIN PLACEMENT



4" PVC PIPE DETAIL

TYPE OF PIPE:

1. The pipe shall be polyvinylchloride SCHEDULE 40 sewer pipe with solvent cemented joints as specified in ASTM Spec. No. F–758.

2. Perforations shall be circular and 1/4" ± 1/16" in diameter. They should be arranged in rows parallel to the axis of the pipe and shall be spaced approximately 3" center to center along the rows. The spigot end of the pipe shall be unperforated for a length equal to the depth of the socket. The placement and total numbers of the rows shall be as shown above with an allowable tolerance of ±10°.

3. Molded Fittings shall be in accordance with ASTM Spec No. D 2665 or F1866. Cost of fitting and installation to be included in the price bid for 4" PVC Edge Drain.

4. The perforated PVC shall be encased in a Geotexlile Fabric per Section 2050. Cost of fabric to be included in the price bid for 4" PVC Edge Drain.

5. PIPE SIZE: 4" diameter IPS SCH 40

6. ROWS OF PERFORATIONS: 4

7. HOLE SIZE: 1/4"

8. HOLE SPACING PER ROW: 3"

NOTES:

1. SEE STORM INLET/PVC DRAIN PIPE DETAIL IN SECTION 1500 FOR ADDITIONAL DETAILS.

THE CITY OF Fargo FAR MORE
ENGINEERING DEPARTMENT

SECTION: 2100	DRAWING: 5.18
REVISION: 20--	
4" PVC EDGE DRAIN DETAIL	
APPROVED:	DATE:

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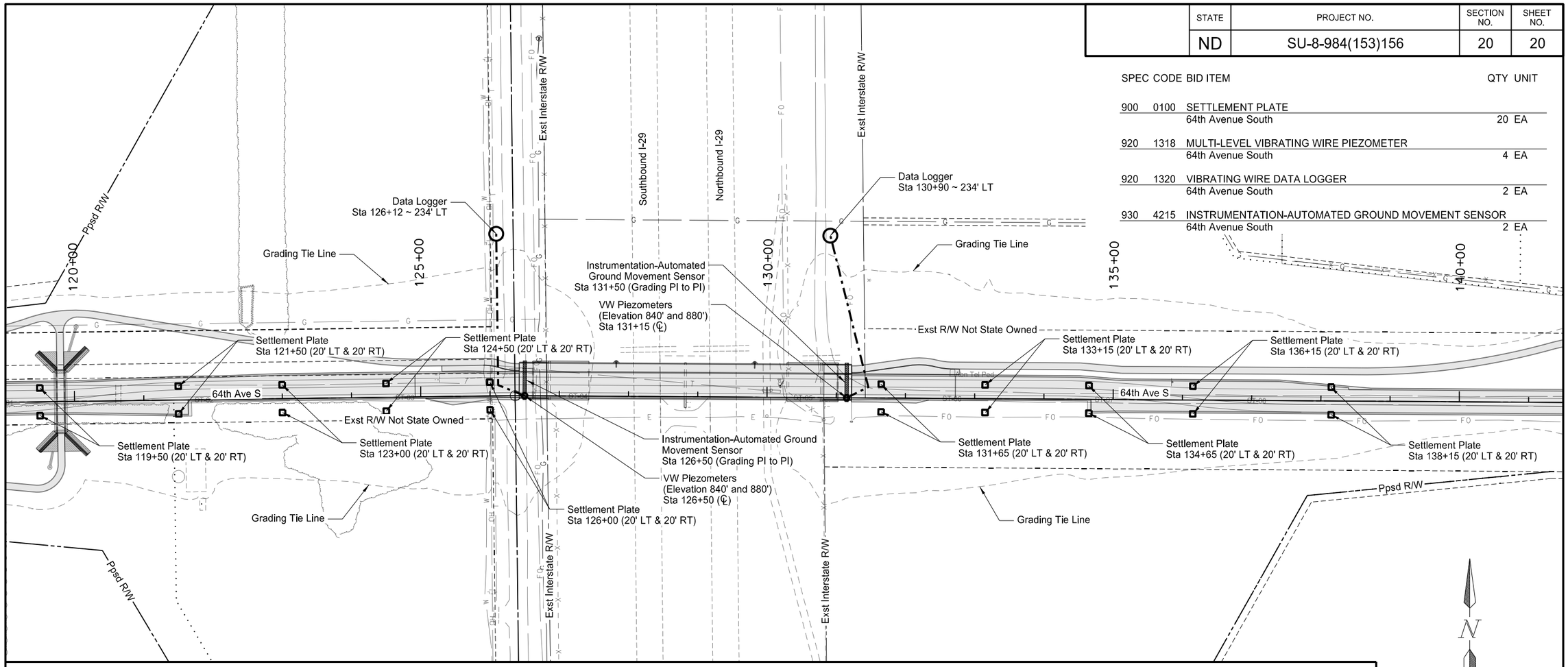
64th Avenue South - 38th St S to 33rd St S

Edge Drain Detail

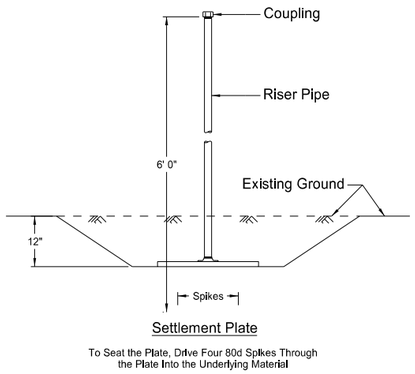
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	20

SPEC	CODE	BID ITEM	QTY	UNIT
900	0100	SETTLEMENT PLATE		
		64th Avenue South	20	EA
920	1318	MULTI-LEVEL VIBRATING WIRE PIEZOMETER		
		64th Avenue South	4	EA
920	1320	VIBRATING WIRE DATA LOGGER		
		64th Avenue South	2	EA
930	4215	INSTRUMENTATION-AUTOMATED GROUND MOVEMENT SENSOR		
		64th Avenue South	2	EA

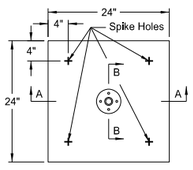


Instrument	Location	Elevation/Notes
West Embankment		
Data Logger & Settlement Cell	Sta 126+12 (234' LT)	-
VW Piezometers (2)	Sta 126+50 (CL)	Elevation 840' and 880'
Instrumentation-Automated Ground Movement Sensor (1)	(between grading PI's left and right of CL)	Top of Native Grade
Settlement Plates (10)	Sta 119+50 (20' LT & 20' RT)	
	Sta 121+50 (20' LT & 20' RT)	
	Sta 123+00 (20' LT & 20' RT)	
	Sta 124+50 (20' LT & 20' RT)	
	Sta 126+00 (20' LT & 20' RT)	
East Embankment		
Data Logger & Settlement Cell	Sta 130+90 (234' LT)	-
VW Piezometers (2)	Sta 131+15 (CL)	Elevation 840' and 880'
Instrumentation-Automated Ground Movement Sensor (1)	(between grading PI's left and right of CL)	Top of Native Grade
Settlement Plates (10)	Sta 131+65 (20' LT & 20' RT)	
	Sta 133+15 (20' LT & 20' RT)	
	Sta 134+65 (20' LT & 20' RT)	
	Sta 136+15(20' LT & 20' RT)	
	Sta 138+15 (20' LT & 20' RT)	



Settlement Plate

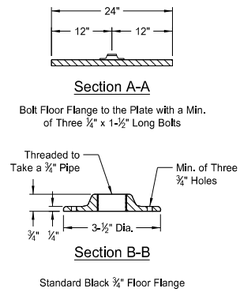
To Seat the Plate, Drive Four 80d Spikes Through the Plate Into the Underlying Material



Plan View

Construct Settlement Plate of ¾" Plywood (Exterior)

Drill Four Holes in the Plate as Shown to Provide a Snug Fit for Four 80d Spikes

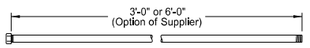


Section A-A

Bolt Floor Flange to the Plate with a Min. of Three ¾" x 1-½" Long Bolts

Section B-B

Standard Black ¾" Floor Flange



Riser Pipe and Coupling

Provide ¾" Standard Weight Black Steel Pipe for Riser Pipe (A.S.T.M. A120)

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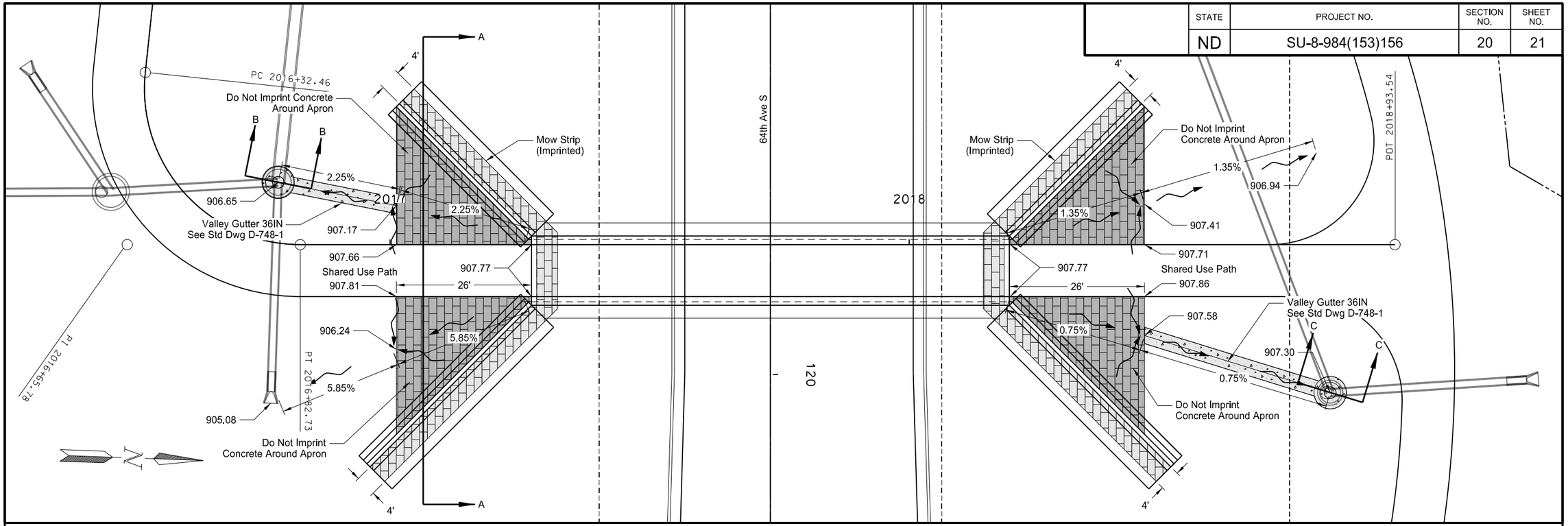
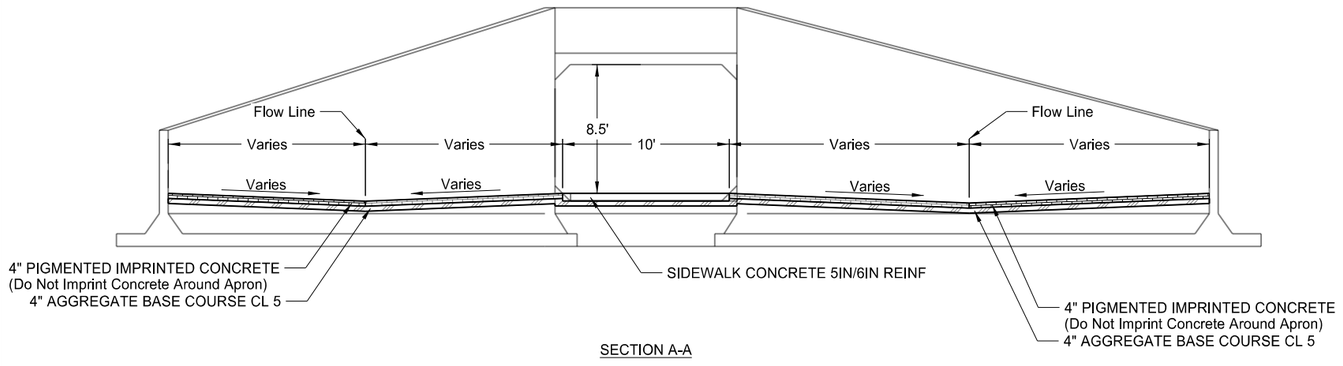
64th Avenue South - 38th St S to 33rd St S

Geotechnical Instrumentation

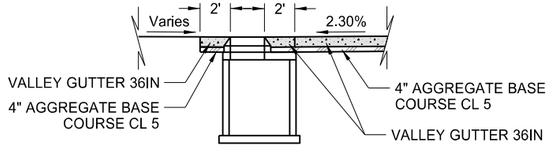
64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	20	21

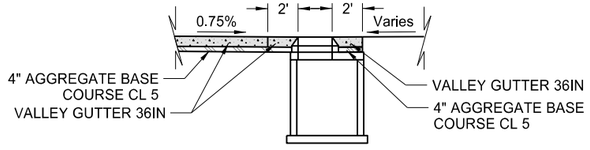




SECTION A-A



SECTION B-B



SECTION C-C

SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Pig. Imp. Conc. & Valley Gutter Base	35	CY
748	1020	VALLEY GUTTER 36IN		
		Ped Underpass	25	SY
750	0030	PIGMENTED IMPRINTED CONCRETE		
		Ped Underpass	157	SY
		Mow Strip	87	SY

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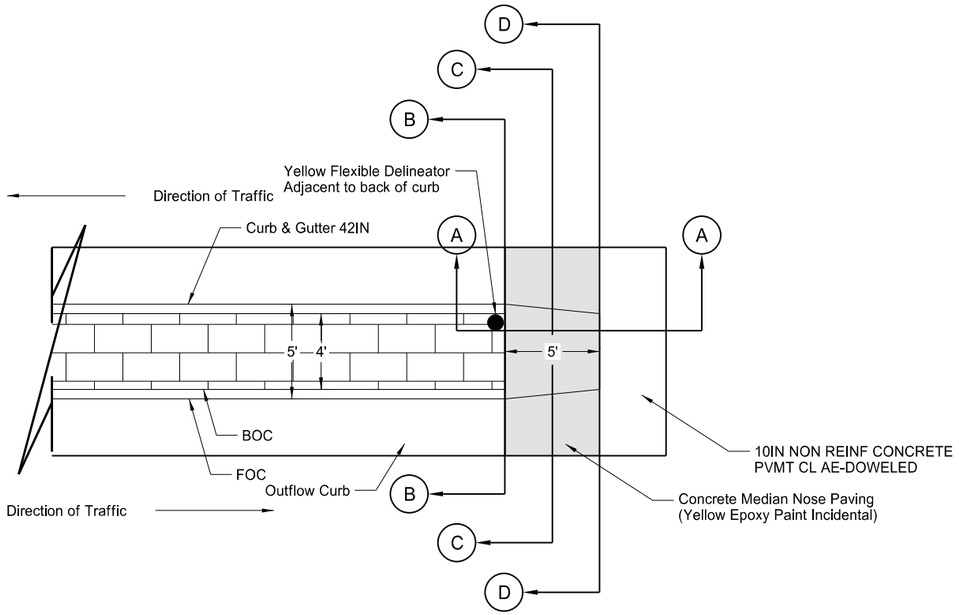
64th Avenue South - 38th St S to 33rd St S

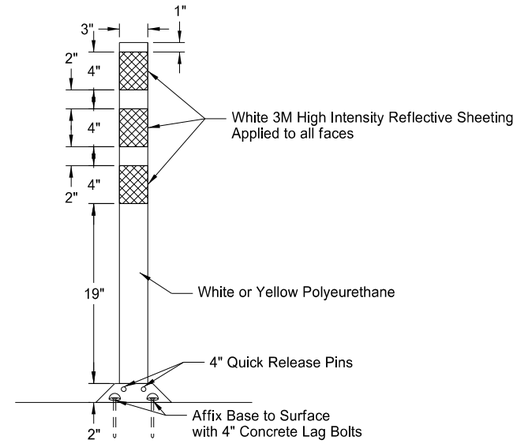
Valley Gutter & Pigmented Imprinted Concrete Detail

64th Avenue South

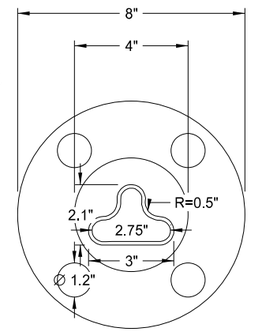
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	22



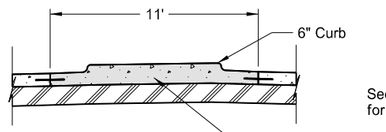
Raised Median Detail
Sta 112+44.25 to Sta 113+84.00



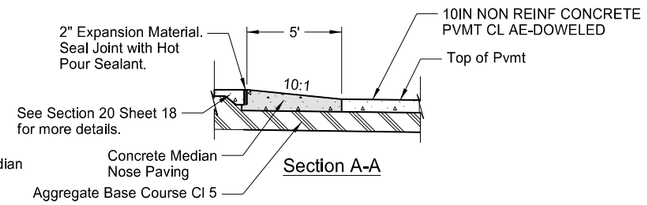
Flexible Delineator Detail
(Profile View)



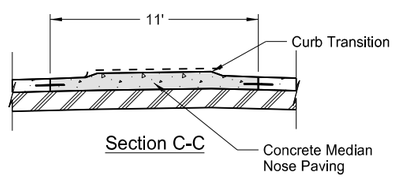
Flexible Delineator Detail
(Enlarged Top View)



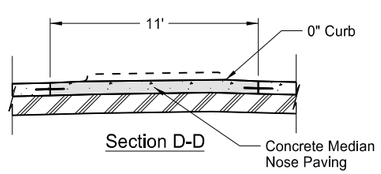
Section B-B



Section A-A



Section C-C



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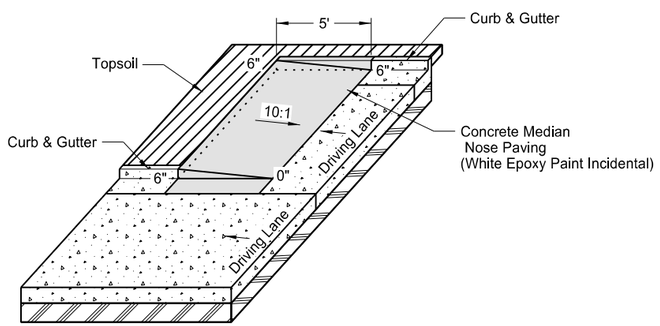
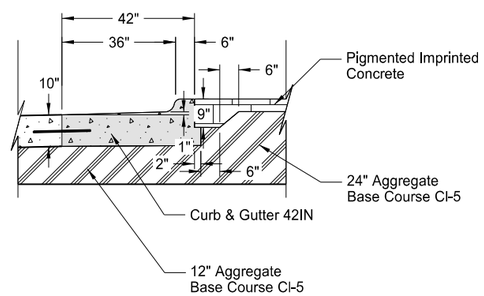


Terminal Lane Median Nose Detail
Sta 121+64 to Sta 121+69
Sta 134+63 to Sta 134+68



Curb & Gutter 42IN
Median
Sta 112+54.33 to Sta 113+75.50

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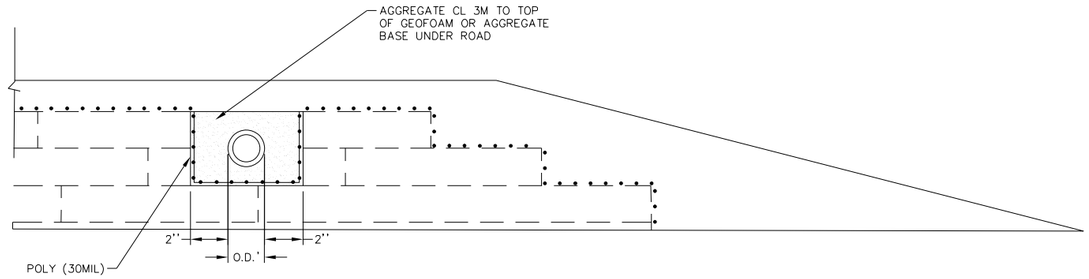
64th Avenue South - 38th St S to 33rd St S

Median Nose, Curb & Gutter, & Flexible Delineator Details

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	20	23



NOTES:
1. COMPACT AGGREGATE CL 3M BACKFILL IN 6IN LAYERS USING A HAND-HELD VIBRATORY PLATE COMPACTOR OR A HAND-HELD MECHANICAL TAMPER TO THE TOP OF THE PIPE AND WITHIN A DISTANCE OF 2' ON EITHER SIDE OF THE PIPE.

GEOFOAM BACKFILL DETAIL

NO SCALE

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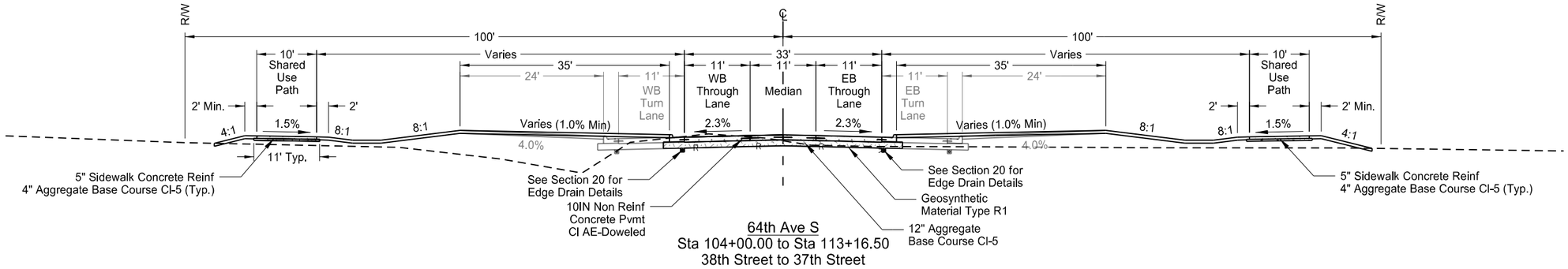
64th Avenue South - 38th St S to 33rd St S

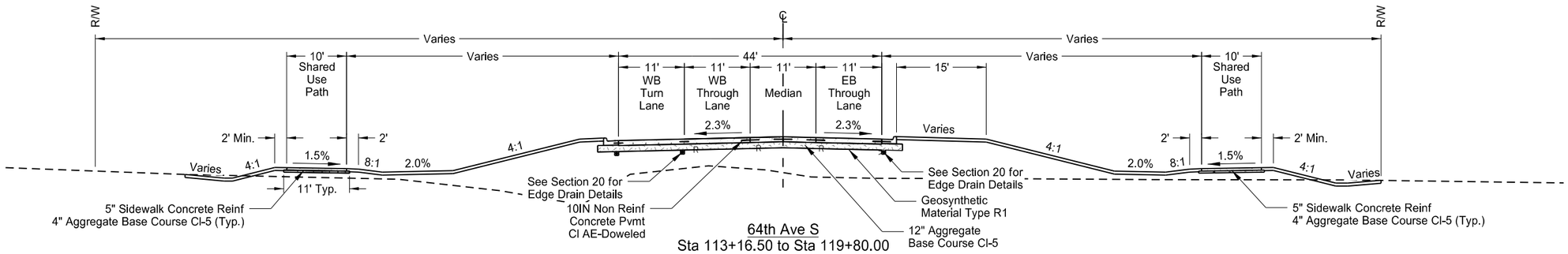
Geofoam Backfill Detail

64th Avenue

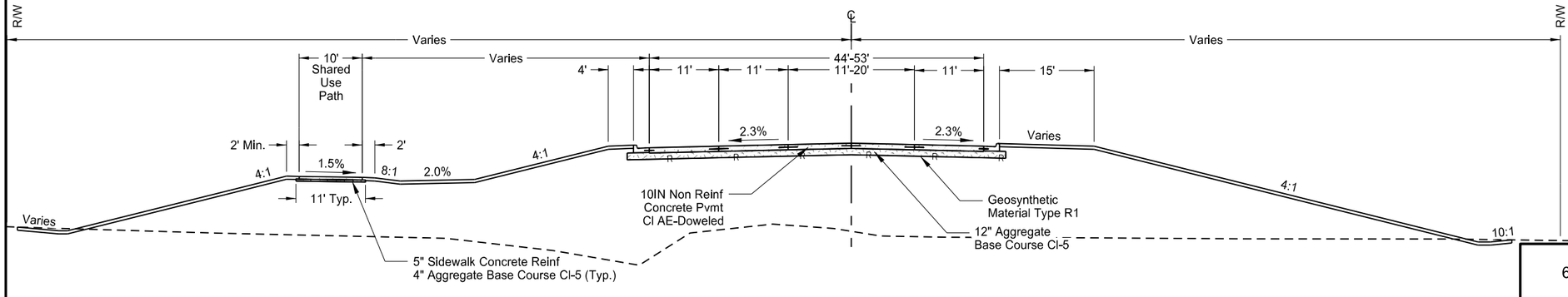
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	30	1



64th Ave S
Sta 104+00.00 to Sta 113+16.50
38th Street to 37th Street



64th Ave S
Sta 113+16.50 to Sta 119+80.00
37th Street to Pedestrian Underpass



64th Ave S
Sta 119+80.00 to Sta 121+64.00

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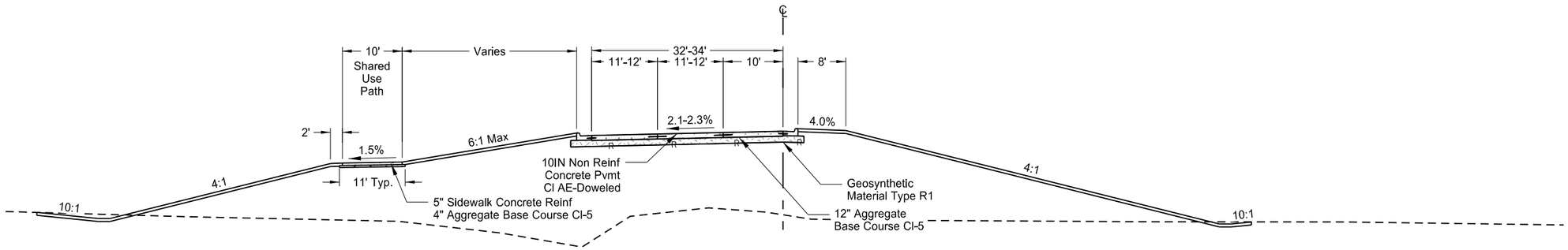
64th Avenue South - 38th St S to 33rd St S

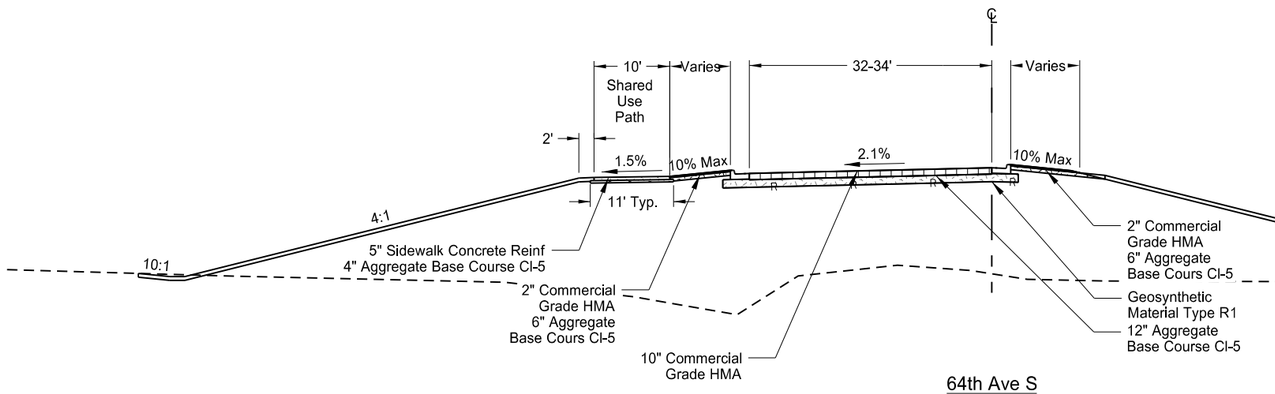
Proposed Typical Sections

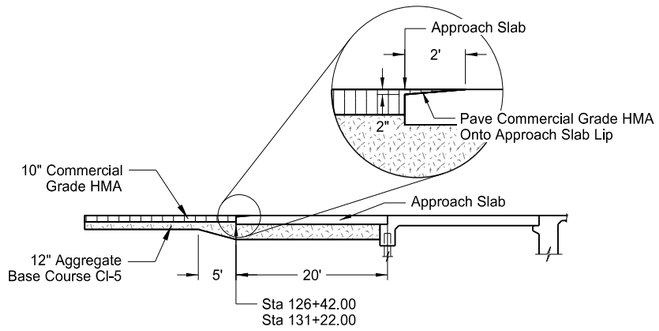
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	30	2

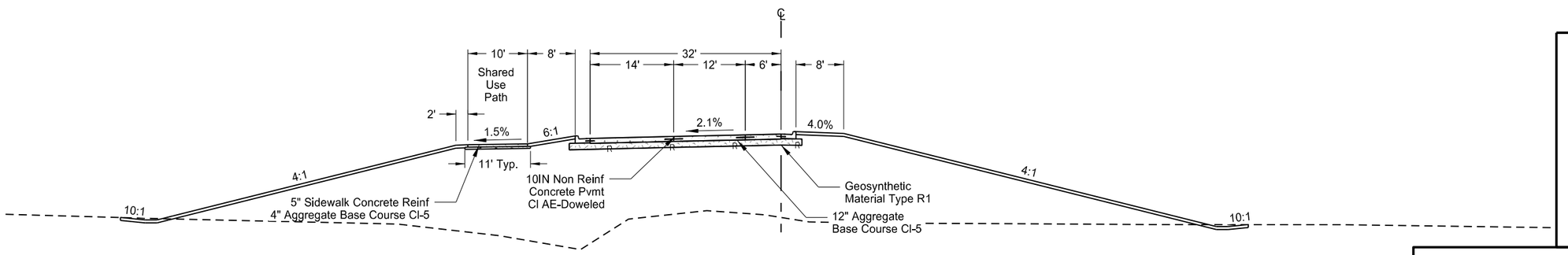


64th Ave S
Sta 121+64.00 to Sta 124+92.00





64th Ave S
Sta 124+92.00 to Sta 126+42.00
Sta 132+22.00 to Sta 133+72.00



64th Ave S
Sta 133+72.00 to Sta 134+68.00

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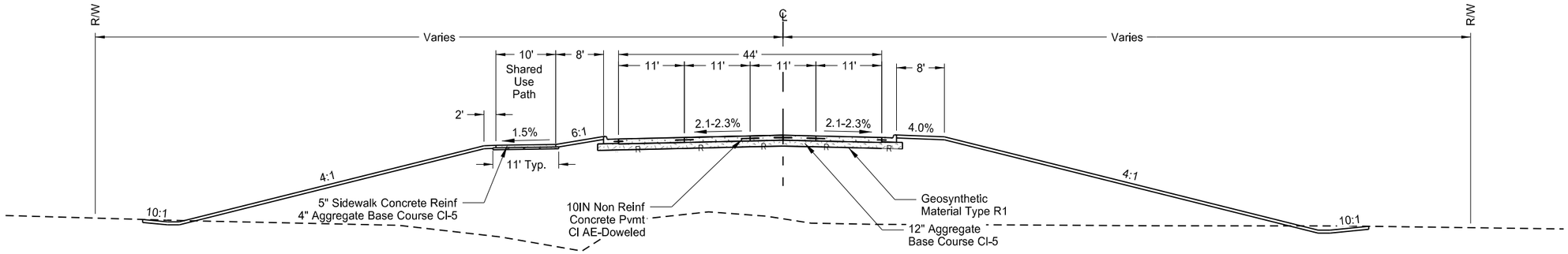
64th Avenue South - 38th St S to 33rd St S

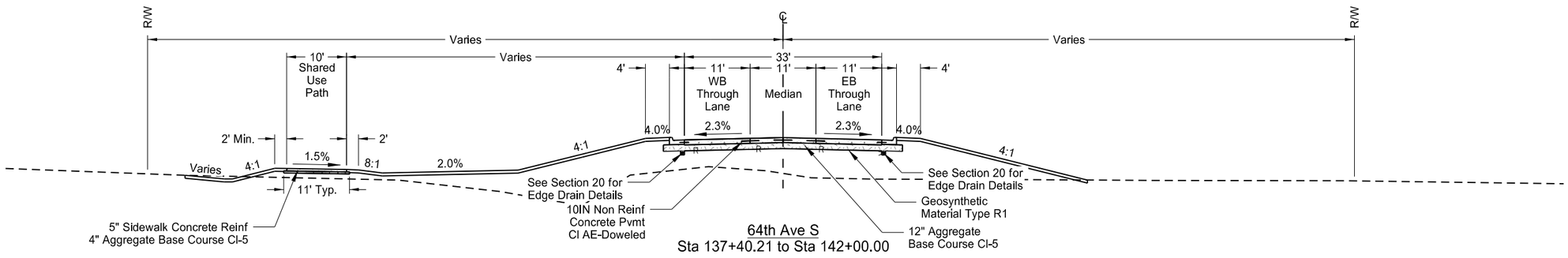
Proposed Typical Sections

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	30	3



64th Ave S
Sta 134+68.00 to Sta 137+40.21



64th Ave S
Sta 137+40.21 to Sta 142+00.00

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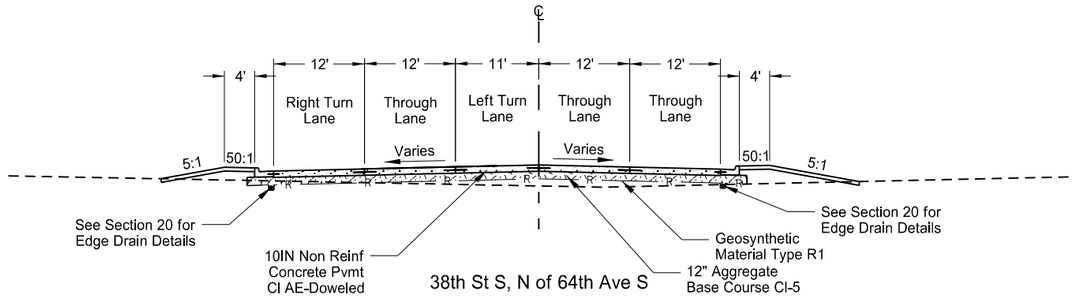
64th Avenue South - 38th St S to 33rd St S

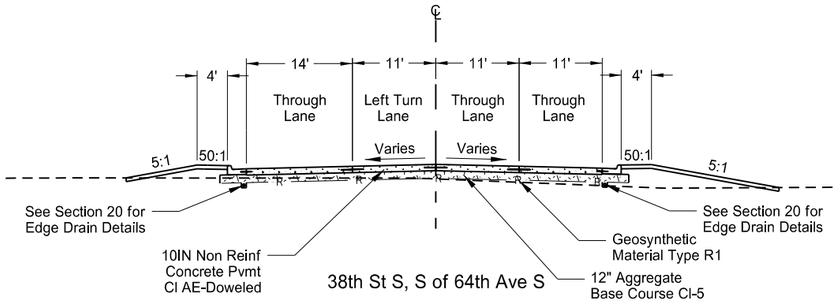
Proposed Typical Sections

64th Avenue South

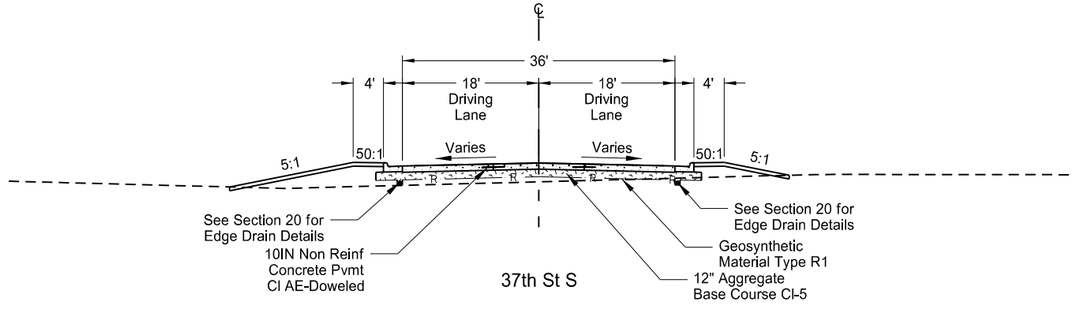
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	30	4



38th St S, N of 64th Ave S



38th St S, S of 64th Ave S



37th St S

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64th Avenue South - 38th St S to 33rd St S

Proposed Typical Sections

38th Street South / 37th Street South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	40	1

SPEC	CODE	BID ITEM	QTY	UNIT
202	0105	REMOVAL OF STRUCTURE		
		Sta 121+49 - 111' RT	1	L SUM
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES		
		Sta 105+55 - 2' RT to 105+58 - 26' LT	30	LF
		Sta 120+63 - 5' RT to 120+63 - 23' LT	28	LF
		Sta 125+65 - 29' LT to 125+88 - 30' LT	24	LF
		Sta 126+17 - 35' LT to 126+63 - 36' LT	47	LF
		Sta 130+51 - 56' LT to 131+07 - 58' LT	57	LF
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 142+41 - 52' LT to 142+81 - 51' LT	10	LF
202	0312	REMOVE EXISTING FENCE		
		Sta 126+78 - 200' LT to 126+98 - 160' RT	366	LF
		Sta 130+29 - 200' LT to 130+84 - 160' RT	385	LF
714	9680	PLUG PIPE-ALL TYPES & SIZES		
		Sta 125+92 - 200' RT	2	EA
		Sta 125+95 - 250' LT	2	EA

PLUG PIPE-ALL TYPES & SIZES (2 EA)
Sta 125+95 ~ 250' LT
(1.5" Water Service Line)

PLUG PIPE-ALL TYPES & SIZES (2 EA)
Sta 125+92 ~ 200' RT
(1.5" Water Service Line)

Remove 30 LF 36" RCP Culvert

Remove 24 LF 24" CSP Culvert

Remove 24 LF 24" CSP Culvert

Removal of Structure

Remove 47 LF 24" CSP Culvert

Removal of Aggregate Included in Common Excavation-Type A

Sta 126+36.29 250' LT

Sta 126+78.19 200.00' LT

Remove Fence

Sta 130+28.52 200.00' LT

Culverts to Remain

Remove Fence

Remove 57 LF 24" CSP Culvert

Remove and Salvage DMS Sign & Mirror (See Section 160)

Remove 10 LF 27" RCP Pipe

Sta 130+83.25 160.00' RT

Sta 126.97.73 160.00' RT

Sta 126+34.33 200' RT

Removal of Aggregate Included in Common Excavation-Type A

Sec 3 T-138-N R-49-W

Sec 2 T-138-N R-49-W

Sec 10 T-138-N R-49-W

Sec 11 T-138-N R-49-W

64th Ave S

Ppsd Esmt

Exst Esmt

38th St S

37th St S

33rd St S

I-29 Southbound

I-29 Northbound

Frontage Road

Ppsd R/W

POT 3129+13.92

LEGEND

- Removal of Structure
- Removal of Aggregate
- Clearing & Grubbing
- Removal of Pipes/Culverts
- Remove Fence
- Pavement Removal Limits

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64th Avenue South - 38th St S to 33rd St S

Removals

64th Avenue South

9/3/2020 6:14:51 PM toddhummel K:\Projects\City\ND\Fargo\14415104\CAD\80984156.153\Design\Plans\040\040RM_001.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	50	1

Manhole No.	ST- 43	96 IN
Sta.	105+09.21' - 58.60' Lt.	
Casting Style		(Z)
Rim Elev.		908.57
Base Elev.		900.38
Invert Elev.		900.75
Riser		6.07 FT
42 In.	Conduit N	900.75
42 In.	Conduit E	900.75
36 In.	Conduit S	900.75
24 In.	Conduit W	901.60

Manhole No.	ST- 44	72 IN
Sta.	105+09.21' - 90.00' Rt.	
Castlng Style		(Z)
Rim Elev.		908.42
Base Elev.		900.76
Invert Elev.		901.09
Riser		5.54 FT
36 In.	Conduit N	901.09
24 In.	Conduit E	901.09
24 In.	Conduit W	901.09

Inlet No.	ST- 44A	
Sta.	104+37' - 90.00' Rt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(E)
Grate Elev.		906.90
Base Elev.		901.02
Invert Elev.		901.27
H' Dlst		4.13 FT
24 In.	Conduit E	901.27

Inlet No.	ST- 44B	
Sta.	105+84' - 90.00' Rt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(E)
Grate Elev.		906.60
Base Elev.		900.85
Invert Elev.		901.22
H' Dlst		4.00 FT
24 In.	Conduit E	901.22

Manhole No.	ST- 50	84 IN
Sta.	105+84' - 58.90' Lt.	
Casting Style		(Y)
Rim Elev.		908.85
Base Elev.		900.43
Invert Elev.		900.8
Riser		6.68 FT
21 In.	Conduit N	901.88
42 In.	Conduit E	900.80
42 In.	Conduit W	900.80

Inlet No.	ST- 50A	
Sta.	105+84' - 82.20' Lt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(D)
Grate Elev.		906.00
Base Elev.		900.92
Invert Elev.		902
H' Dist		4.00 FT
21 In.	Conduit S	902.00

Inlet No.	ST- 51A	
Sta.	107+18' - 66.5' Lt	
Type	Inlet Catch Basin Beehive	
Grate Style		(D)
Grate Elev.		908.23
Base Elev.		903.65
Invert Elev.		904.23
H' Dlst		4.00 FT
15 In.	Conduit S	904.23

Inlet No.	ST- 51B	
Sta.	107+20' - 29.00' Lt.	
Type	Inlet Type 2	
Grate Style		(A)
Grate Elev.		907.82
Base Elev.		902.17
Invert Elev.		902.36
H' Dist		4.81 FT
15 In.	Conduit N	902.36
15 In.	Conduit S	902.36

Inlet No.	ST- 51C	
Sta.	107+20' - 18.00' Rt.	
Type	Inlet Type 2	
Grate Style		(A)
Grate Elev.		908.07
Base Elev.		902.41
Invert Elev.		902.6
H' Dist		4.82 FT
15 In.	Conduit N	902.60
15 In.	Conduit S	902.60

Inlet No.	ST- 51D	
Sta.	107+20' - 74.30' Rt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(D)
Grate Elev.		908.07
Base Elev.		902.70
Invert Elev.		902.89
H' Dist		4.28 FT
15 In.	Conduit N	902.89
15 In.	Conduit SE	902.89

Inlet No.	ST- 51E	
Sta.	107+37' - 96.7' Rt	
Type	Inlet Catch Basin Beehive	
Grate Style		(D)
Grate Elev.		907.42
Base Elev.		902.84
Invert Elev.		903.42
H' Dist		4.00 FT
15 In.	Conduit NW	903.42

Manhole No.	ST- 52	84 IN
Sta.	109+20' - 50.00' Lt.	
Casting Style		(Y)
Rim Elev.		909.93
Base Elev.		900.63
Invert Elev.		901
Riser		7.55 FT
15 In.	Conduit N	903.60
42 In.	Conduit E	901.00
42 In.	Conduit W	901.00

Inlet No.	ST- 52A	
Sta.	109+20' - 94.8' Lt	
Type	Inlet Catch Basin Beehive	
Grate Style		(D)
Grate Elev.		908.30
Base Elev.		903.72
Invert Elev.		904.05
H' Dist		4.00 FT
15 In.	Conduit S	904.05

Inlet No.	ST- 53A	
Sta.	111+12' - 67.0' Lt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(D)
Grate Elev.		907.98
Base Elev.		902.45
Invert Elev.		902.66
H' Dist		4.45 FT
18 In.	Conduit SE	902.66
15 In.	Conduit NW	902.66

Inlet No.	ST- 53B	
Sta.	111+21' - 18.00' Lt.	
Type	Inlet Type 2	
Grate Style		(A)
Grate Elev.		908.07
Base Elev.		902.67
Invert Elev.		902.88
H' Dist		4.57 FT
18 In.	Conduit N	902.88
15 In.	Conduit S	902.88

Inlet No.	ST- 53C	
Sta.	111+21' - 18.00' Rt.	
Type	Inlet Type 2	
Grate Style		(A)
Grate Elev.		908.07
Base Elev.		902.87
Invert Elev.		903.06
H' Dist		4.36
15 In.	Conduit N	903.06
15 In.	Conduit S	903.06

Manhole No.	ST- 54	48 IN
Sta.	111+21' - 29.00' Rt.	
Casting Style		(Y)
Rim Elev.		908.75
Base Elev.		902.93
Invert Elev.		903.12
Riser		4.23 FT
15 In.	Conduit N	903.12
15 In.	Conduit SW	903.12

Inlet No.	ST- 54A	
Sta.	110+98' - 68.40' Rt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(D)
Grate Elev.		908.26
Base Elev.		903.18
Invert Elev.		903.57
H' Dist		4.00 FT
15 In.	Conduit NE	903.57
15 In.	Conduit S	903.57

Manhole No.	ST- 55	84 IN
Sta.	112+54' - 57.00' Lt.	
Castlng Style		(Y)
Rim Elev.		908.77
Base Elev.		900.94
Invert Elev.		901.27
Riser		6.08 FT
24 In.	Conduit N	903.58
36 In.	Conduit E	901.27
24 In.	Conduit S	903.85
36 In.	Conduit W	901.27

Inlet No.	ST- 55A	
Sta.	112+49' - 71.70' Lt.	
Type	48 IN	Inlet - Spcl CB Type A
Grate Style		(D)
Grate Elev.		907.80
Base Elev.		902.72
Invert Elev.		903.8
H' Dlst		4.00 FT
24 In.	Conduit S	903.80

Code	Manhole Casting Style	Casting Thickness
(Y)	Neenah R-1733	7
	East Jordan 1205	
(Z)	Neenah R-1955-1	11.5
	East Jordan 3025 SELF LEVEL	

Code	Inlet Casting / Grate Style	Casting Thickness
(A)	Neenah R-3067-C (2" Radius Curb Box)	4
	East Jordan 7030-M2 (T1 Back)	
(B)	Neenah R-2577 (Convex Grate)	7
	East Jordan 1205 (Convex Grate)	
(D)	Neenah R-4342 (Ditch Grate, Stool Type)	1
(E)	Neenah R-2573-C	7

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64th Avenue South - 38th St S to 33rd St S

Inlet and Manhole Summary

64th Avenue

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	50	2

Inlet No.	ST- 55B	
Sta.	112+54' - 29.00' Lt.	
Type	Inlet Type 2	
Grate Style	(A)	
Grate Elev.	908.36	
Base Elev.	903.53	
Invert Elev.	904.06	
H' Dist	4.00 FT	
24 In.	Conduit N	904.06

Inlet No.	ST- 56D	
Sta.	115+08' - 28.00' Rt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	908.22	
Base Elev.	901.42	
Invert Elev.	901.71	
H' Dist	5.97 FT	
30 In.	Conduit N	901.71
30 In.	Conduit S	901.71
18 In.	Conduit W	903.10

Inlet No.	ST- 58A	
Sta.	120+04' - 107.80' Lt.	
Type	48 IN Inlet - Spcl CB Type A	
Grate Style	(B)	
Grate Elev.	907.30	
Base Elev.	901.80	
Invert Elev.	903.15	
H' Dist	4.00 FT	
15 In.	Conduit SW	903.15
15 In.	Conduit N	903.15

Inlet No.	ST- 62A	
Sta.	115+05' - 93.10' Rt.	
Type	Inlet Catch Basin Beehive	
Grate Style	(D)	
Grate Elev.	906.50	
Base Elev.	901.92	
Invert Elev.	902.5	
H' Dist	4.00 FT	
21 In.	Conduit N	902.50

Manhole No.	ST- 65	72 IN
Sta.	119+65' - 127.00' Rt.	
Casting Style	(Y)	
Rim Elev.	907.83	
Base Elev.	902.08	
Invert Elev.	903.02	
Riser	4.00 FT	
15 In.	Conduit S	903.02
15 In.	Conduit N	903.02
15 In.	Conduit SW	903.02

Manhole No.	ST- 56	84 IN
Sta.	114+99' - 50.00' Lt.	
Casting Style	(Y)	
Rim Elev.	907.41	
Base Elev.	901.13	
Invert Elev.	901.46	
Riser	4.53 FT	
18 In.	Conduit N	902.21
24 In.	Conduit E	902.01
36 In.	Conduit SE	901.64
36 In.	Conduit W	901.46

Inlet No.	ST- 56E	
Sta.	114+97' - 18.00' Rt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	908.21	
Base Elev.	903.00	
Invert Elev.	903.21	
H' Dist	4.38 FT	
18 In.	Conduit E	903.21

Inlet No.	ST- 60A	
Sta.	118+99' - 29.00' Lt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	916.66	
Base Elev.	911.83	
Invert Elev.	912.66	
H' Dist	4.00 FT	
15 In.	Conduit S	912.66

Manhole No.	ST- 63	60 IN
Sta.	117+63' - 73.70' Rt.	
Casting Style	(Y)	
Rim Elev.	907.43	
Base Elev.	901.68	
Invert Elev.	902.16	
Riser	4.00 FT	
24 In.	Conduit E	902.16
24 In.	Conduit S	902.16
30 In.	Conduit W	902.16

Inlet No.	ST- 65A	
Sta.	119+65' - 192.10' Rt	
Type	Inlet Catch Basin Beehive	
Grate Style	(D)	
Grate Elev.	907.00	
Base Elev.	902.42	
Invert Elev.	903.17	
H' Dist	4.00 FT	
15 In.	Conduit N	903.17

Inlet No.	ST- 56A	
Sta.	114+94' - 78.2' Lt	
Type	Inlet Catch Basin Beehive	
Grate Style	(D)	
Grate Elev.	906.50	
Base Elev.	901.92	
Invert Elev.	902.5	
H' Dist	4.00 FT	
18 In.	Conduit S	902.50

Manhole No.	ST- 57	60 IN
Sta.	117+81' - 54.30' Lt.	
Casting Style	(Y)	
Rim Elev.	908.40	
Base Elev.	902.27	
Invert Elev.	902.52	
Riser	4.38 FT	
18 In.	Conduit N	902.52
18 In.	Conduit E	902.52
24 In.	Conduit W	902.52

Inlet No.	ST- 60B	
Sta.	118+99' - 18.00' Rt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	916.91	
Base Elev.	912.08	
Invert Elev.	912.42	
H' Dist	4.00 FT	
15 In.	Conduit N	912.42
15 In.	Conduit S	912.42

Inlet No.	ST- 63A	
Sta.	117+63' - 91.00' Rt.	
Type	60 IN Inlet - Spcl CB Type A	
Grate Style	(D)	
Grate Elev.	907.07	
Base Elev.	901.82	
Invert Elev.	902.21	
H' Dist	4.00 FT	
24 In.	Conduit N	902.21
18 In.	Conduit S	902.21
15 In.	Conduit SW	902.21

Inlet No.	ST- 150A	
Sta.	134+28' - 33.5' Lt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	929.08	
Base Elev.	924.25	
Invert Elev.	925.08	
H' Dist	4.00 FT	
12 In.	Conduit N	925.08

Inlet No.	ST- 56B	
Sta.	115+08' - 29.00' Lt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	907.96	
Base Elev.	901.33	
Invert Elev.	901.66	
H' Dist	5.80 FT	
36 In.	Conduit NW	901.66
30 In.	Conduit S	901.66
18 In.	Conduit W	902.85

Manhole No.	ST- 57-1	48 IN
Sta.	117+81' - 73.20' Lt.	
Casting Style	(Y)	
Rim Elev.	907.30	
Base Elev.	901.72	
Invert Elev.	902.9	
Riser	4.00 FT	
15 In.	Conduit N	903.10
15 In.	Conduit E	903.10
18 In.	Conduit S	902.90
15 In.	Conduit W	903.10

Inlet No.	ST- 61A	
Sta.	123+22' - 35.50' Lt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	928.74	
Base Elev.	923.91	
Invert Elev.	924.74	
H' Dist	4.00 FT	
12 In.	Conduit N	924.74

Inlet No.	ST- 63B	
Sta.	117+64' - 172.00' Rt	
Type	Inlet Catch Basin Beehive	
Grate Style	(D)	
Grate Elev.	906.43	
Base Elev.	901.85	
Invert Elev.	902.43	
H' Dist	4.00 FT	
18 In.	Conduit N	902.43

Inlet No.	ST- 56C	
Sta.	114+97' - 29.00' Lt.	
Type	Inlet - Type 2 Double	
Grate Style	(A)	
Grate Elev.	907.96	
Base Elev.	902.75	
Invert Elev.	902.96	
H' Dist	4.38 FT	
18 In.	Conduit E	902.96

Manhole No.	ST- 58	48 IN
Sta.	118+99' - 67.90' Lt.	
Casting Style	(Y)	
Rim Elev.	908.51	
Base Elev.	902.57	
Invert Elev.	902.78	
Riser	4.36 FT	
15 In.	Conduit NE	902.91
18 In.	Conduit W	902.78

Manhole No.	ST- 62	72 IN
Sta.	115+08' - 56.40' Rt.	
Casting Style	(Y)	
Rim Elev.	907.84	
Base Elev.	901.49	
Invert Elev.	901.78	
Riser	4.60 FT	
30 In.	Conduit N	901.78
30 In.	Conduit E	901.78
21 In.	Conduit S	901.99

Inlet No.	ST- 64A	
Sta.	119+63' - 94.80' Rt.	
Type	60 IN Inlet - Spcl CB Type A	
Grate Style	(B)	
Grate Elev.	906.68	
Base Elev.	901.01	
Invert Elev.	902.68	
H' Dist	4.00 FT	
24 In.	Conduit W	902.68
15 In.	Conduit E	902.84
15 In.	Conduit S	902.84

Code	Manhole Casting Style	Casting Thickness
(Y)	Neenah R-1733	7
	East Jordan 1205	
(Z)	Neenah R-1955-1	11.5
	East Jordan 3025 SELF LEVEL	

Code	Inlet Casting / Grate Style	Casting Thickness
(A)	Neenah R-3067-C (2" Radius Curb Box)	4
	East Jordan 7030-M2 (T1 Back)	
(B)	Neenah R-2577 (Convex Grate)	7
	East Jordan 1205 (Convex Grate)	
(D)	Neenah R-4342 (Ditch Grate, Stool Type)	1
(E)	Neenah R-2573-C	7

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64th Avenue South - 38th St S to 33rd St S

Inlet and Manhole Summary

64th Avenue

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	50	3

Inlet No.	ST- 151A			
Sta.		137+37' - 29' Lt.		
Type		Inlet - Type 2		
Grate Style		(A)		
Grate Elev.		920.50		
Base Elev.		915.67		
Invert Elev.		917.05		
H' Dist		4.00 FT		
	15 In.	Conduit	S	917.05

Inlet No.	ST- 151B			
Sta.		137+37' - 18.00' Rt.		
Type		Inlet - Type 2		
Grate Style		(A)		
Grate Elev.		920.75		
Base Elev.		915.92		
Invert Elev.		916.81		
H' Dist		4.00 FT		
	15 In.	Conduit	S	916.81
	15 In.	Conduit	N	916.81

Inlet No.	ST- 153A			
Sta.		137+29' - 104.00' Lt.		
Type	48 IN	Inlet - Spcl CB Type A		
Grate Style		(D)		
Grate Elev.		906.40		
Base Elev.		901.32		
Invert Elev.		902.16		
H' Dist		4.00 FT		
	15 In.	Conduit	E	902.16
	15 In.	Conduit	N	902.16

Inlet No.	ST- 154A			
Sta.		137+37' - 151.50' Lt		
Type		Inlet Catch Basin Beehive		
Grate Style		(D)		
Grate Elev.		906.40		
Base Elev.		901.82		
Invert Elev.		902.4		
H' Dist		4.00 FT		
	15 In.	Conduit	S	902.40

Inlet No.	ST- 155A			
Sta.		140+50' - 81.50' Lt.		
Type	60 IN	Inlet - Spcl CB Type A		
Grate Style		(D)		
Grate Elev.		907.05		
Base Elev.		900.34		
Invert Elev.		900.55		
H' Dist		5.46 FT		
	18 In.	Conduit	E	900.55
	15 In.	Conduit	S	903.05
	15 In.	Conduit	W	900.55

Inlet No.	ST- 155B			
Sta.		140+50' - 18.00' Lt.		
Type		Inlet - Type 2		
Grate Style		(A)		
Grate Elev.		911.39		
Base Elev.		906.56		
Invert Elev.		907.03		
H' Dist		4.00 FT		
	15 In.	Conduit	N	907.03
	15 In.	Conduit	S	907.03

Inlet No.	ST- 155C			
Sta.		140+50' - 18.00' Rt.		
Type		Inlet - Type 2		
Grate Style		(A)		
Grate Elev.		911.39		
Base Elev.		906.56		
Invert Elev.		907.39		
H' Dist		4.00 FT		
	15 In.	Conduit	N	907.39

Inlet No.	ST- 158A			
Sta.		138+25' - 71.70' Rt.		
Type	48 IN	Inlet - Spcl CB Type A		
Grate Style		(D)		
Grate Elev.		906.50		
Base Elev.		901.20		
Invert Elev.		901.41		
H' Dist		4.22 FT		
	18 In.	Conduit	E	901.41

Manhole No.	ST- 159			48 IN
Sta.		141+80' - 58.10' Rt.		
Casting Style				(Y)
Rim Elev.				907.24
Base Elev.				899.40
Invert Elev.				899.63
Riser				6.26 FT
	21 In.	Conduit	E	899.63
	18 In.	Conduit	W	899.63

Code	Manhole Casting Style	Casting Thickness
(Y)	Neenah R-1733	7
	East Jordan 1205	
(Z)	Neenah R-1955-1	11.5
	East Jordan 3025 SELF LEVEL	

Code	Inlet Casting / Grate Style	Casting Thickness
(A)	Neenah R-3067-C (2" Radius Curb Box)	4
	East Jordan 7030-M2 (T1 Back)	
(B)	Neenah R-2577 (Convex Grate)	7
	East Jordan 1205 (Convex Grate)	
(D)	Neenah R-4342 (Ditch Grate, Stool Type)	1
(E)	Neenah R-2573-C	7

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64th Avenue South - 38th St S to 33rd St S

Inlet and Manhole Summary

64th Avenue

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	51	1

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	End Sections		Applicable Backfill
				In	Bid Item	LF		In	Begin EA	End EA	
104+00	55' Lt	104+76	57' Lt	24	Pipe Conc Reinf 24IN Cl III- Storm Drain	76	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
104+76	57' Lt	43		24	Pipe Conc Reinf 24IN Cl III- Storm Drain	33	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.2
44A		104+84	90' Rt	24	Pipe Conc Reinf 24IN Cl III- Storm Drain	47	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
104+84	90' Rt	44		24	Pipe Conc Reinf 24IN Cl III- Storm Drain	25	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.2
44		105+42	90' Rt	24	Pipe Conc Reinf 24IN Cl III- Storm Drain	33	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.2
105+42	90' Rt	44B		24	Pipe Conc Reinf 24IN Cl III- Storm Drain	42	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
44		43		36	Pipe Conc Reinf 36IN Cl III- Storm Drain	149	Reinforced Concrete Pipe - Class III	36			SP 98(20) 1500 - 5.2
43		105+09	85' Lt	42	Pipe Conc Reinf 42IN Cl II-Storm Drain	26	Reinforced Concrete Pipe - Class II	42			SP 98(20) 1500 - 5.2
43		105+44	59' Lt	42	Pipe Conc Reinf 42IN Cl II-Storm Drain	35	Reinforced Concrete Pipe - Class II	42			SP 98(20) 1500 - 5.2
105+44	59' Lt	50		42	Pipe Conc Reinf 42IN Cl II-Storm Drain	40	Reinforced Concrete Pipe - Class II	42			SP 98(20) 1500 - 5.1
50		50A		21	Pipe Conduit 21IN-Storm Drain	24	Reinforced Concrete Pipe - Class III	21			SP 98(20) 1500 - 5.1
							PVC SDR 35	21			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
50		51		42	Pipe Conduit 42IN-Storm Drain	136	Reinforced Concrete Pipe - Class II	42			SP 98(20) 1500 - 5.1
							PVC SDR 35	42			
							Polypropylene Pipe (AASHTO M330, Type S)	42			
51		51A		15	Pipe Conduit 15IN-Storm Drain	17	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
51		51B		15	Pipe Conduit 15IN-Storm Drain	21	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
51B		51C		15	Pipe Conc Reinf 15IN Cl V - Storm Drain	47	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.2
51C		51D		15	Pipe Conduit 15IN-Storm Drain	56	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
51D		51E		15	Pipe Conduit 15IN-Storm Drain	27	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
51		52		42	Pipe Conduit 42IN-Storm Drain	200	Reinforced Concrete Pipe - Class II	42			SP 98(20) 1500 - 5.1
							PVC SDR 35	42			
							Polypropylene Pipe (AASHTO M330, Type S)	42			
52		52A		15	Pipe Conduit 15IN-Storm Drain	45	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
52		53		42	Pipe Conduit 42IN-Storm Drain	200	Reinforced Concrete Pipe - Class II	42			SP 98(20) 1500 - 5.1
							PVC SDR 35	42			
							Polypropylene Pipe (AASHTO M330, Type S)	42			
53		53A		18	Pipe Conduit 18IN-Storm Drain	19	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
53A		110+98	96' Lt	15	Pipe Conduit 15IN-Storm Drain	33	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
53		53B		18	Pipe Conduit 18IN-Storm Drain	32	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
53B		53C		15	Pipe Conc Reinf 15IN Cl V- Storm Drain	36	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.2
53C		54		15	Pipe Conc Reinf 15IN Cl V- Storm Drain	11	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.2

FES = Flared End Section

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64th Avenue South - 38th St S to 33rd St S

Allowable Pipe List

64th Avenue

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	51	2

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	End Sections		Applicable Backfill
				In	Bid Item	LF		In	Begin EA	End EA	
54		54A		15	Pipe Conduit 15IN-Storm Drain	45	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
54A		54B		15	Pipe Conduit 15IN-Storm Drain	22	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
53		55		36	Pipe Conduit 36IN-Storm Drain	134	Reinforced Concrete Pipe - Class III	36			SP 98(20) 1500 - 5.1
							PVC SDR 35	36			
							Polypropylene Pipe (AASHTO M330, Type S)	36			
55		55A		24	Pipe Conduit 24IN-Storm Drain	16	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
							PVC SDR 35	24			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
55		55B		24	Pipe Conduit 24IN-Storm Drain	28	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
							PVC SDR 35	24			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
55		112+90	56' Lt	36	Pipe Conc Reinf 36IN Cl II-Storm Drain	35	Reinforced Concrete Pipe - Class III	36			SP 98(20) 1500 - 5.1
112+90	56' Lt	113+43	54' Lt	36	Pipe Conc Reinf 36IN Cl II-Storm Drain	54	Reinforced Concrete Pipe - Class III	36			SP 98(20) 1500 - 5.2
113+43	54' Lt	56		36	Pipe Conc Reinf 36IN Cl II-Storm Drain	156	Reinforced Concrete Pipe - Class III	36			SP 98(20) 1500 - 5.1
56		56A		18	Pipe Conduit 18IN-Storm Drain	29	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
56		56B		36	Pipe Conduit 36IN-Storm Drain	23	Reinforced Concrete Pipe - Class III	36			SP 98(20) 1500 - 5.1
							PVC SDR 35	36			
							Polypropylene Pipe (AASHTO M330, Type S)	36			
56B		56C		18	Pipe Conc Reinf 18IN Cl IV - Storm Drain	11	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.2
56B		56D		30	Pipe Conc Reinf 30IN Cl III- Storm Drain	47	Reinforced Concrete Pipe - Class III	30			SP 98(20) 1500 - 5.2
56D		56E		18	Pipe Conc Reinf 18IN Cl IV - Storm Drain	11	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.2
56D		62		30	Pipe Conduit 30IN-Storm Drain	38	Reinforced Concrete Pipe - Class III	30			SP 98(20) 1500 - 5.1
							PVC SDR 35	30			
							Polypropylene Pipe (AASHTO M330, Type S)	30			
56		57		24	Pipe Conduit 24IN-Storm Drain	283	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
							PVC SDR 35	24			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
57		57-1		18	Pipe Conduit 18IN-Storm Drain	19	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
57-1		117+61	73' Lt	15	Pipe Conduit 15IN-Storm Drain	20	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
57-1		118+00	73' Lt	15	Pipe Conduit 15IN-Storm Drain	19	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
57-1		117+80	105' Lt	15	Pipe Conduit 15IN-Storm Drain	32	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
57		58		18	Pipe Conduit 18IN-Storm Drain	118	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
58		58A		15	Pipe Conduit 15IN-Storm Drain	112	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
58A		120+01	146' Lt	15	Pipe Conduit 15IN-Storm Drain	38	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
60A		60B		15	Pipe Conc Reinf 15IN Cl V - Storm Drain	47	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.2
60B		118+99	46' Rt	15	Pipe Conduit 15IN-Storm Drain	28	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
61A		682+60	0' Lt	12	Pipe Conduit 12IN-Storm Drain	110	PVC SDR 26	12		FES	Section 20 Sheet 22

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64th Avenue South - 38th St S to 33rd St S

Allowable Pipe List

64th Avenue

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	51	3

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	End Sections		Applicable Backfill
				In	Bid Item	LF		In	Begin EA	End EA	
62		62A		21	Pipe Conduit 21IN-Storm Drain	37	Reinforced Concrete Pipe - Class III	21			SP 98(20) 1500 - 5.1
							PVC SDR 35	21			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
62		63		30	Pipe Conduit 30IN-Storm Drain	255	Reinforced Concrete Pipe - Class III	30			SP 98(20) 1500 - 5.1
							PVC SDR 35	30			
							Polypropylene Pipe (AASHTO M330, Type S)	30			
63		63A		24	Pipe Conduit 24IN-Storm Drain	18	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
							PVC SDR 35	24			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
63A		63B		18	Pipe Conduit 18IN-Storm Drain	81	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
63A		117+18	118' Rt	15	Pipe Conduit 15IN-Storm Drain	52	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
63		64A		24	Pipe Conduit 24IN-Storm Drain	201	Reinforced Concrete Pipe - Class III	24			SP 98(20) 1500 - 5.1
							PVC SDR 35	24			
							Polypropylene Pipe (AASHTO M330, Type S)	24			
64A		120+03	96' Rt	15	Pipe Conduit 15IN-Storm Drain	40	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
64A		65		15	Pipe Conduit 15IN-Storm Drain	32	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
65		65A		15	Pipe Conduit 15IN-Storm Drain	65	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
65		119+42	142' Rt	15	Pipe Conduit 15IN-Storm Drain	27	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
150A		134+28	139' Lt	12	Pipe Conduit 12IN-Storm Drain	106	PVC SDR 26	12		FES	Section 20 Sheet 22
151A		151B		15	Pipe Conc Reinf 15IN Cl V - Storm Drain	47	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.2
151B		137+38	39' Rt	15	Pipe Conduit 15IN-Storm Drain	21	Reinforced Concrete Pipe - Class III	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15		FES	
							Polypropylene Pipe (AASHTO M330, Type S)	15			
154A		153A		15	Pipe Conduit 15IN-Storm Drain	48	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
153A		155A		15	Pipe Conduit 15IN-Storm Drain	321	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
155A		155B		15	Pipe Conduit 15IN-Storm Drain	64	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.1
							PVC SDR 35	15			
							Polypropylene Pipe (AASHTO M330, Type S)	15			
155B		155C		15	Pipe Conc Reinf 15IN Cl V - Storm Drain	36	Reinforced Concrete Pipe - Class V	15			SP 98(20) 1500 - 5.2
155A		142+91	54' Lt	18	Pipe Conduit 18IN-Storm Drain	233	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
158A		159		18	Pipe Conduit 18IN-Storm Drain	356	Reinforced Concrete Pipe - Class V	18			SP 98(20) 1500 - 5.1
							PVC SDR 35	18			
							Polypropylene Pipe (AASHTO M330, Type S)	18			
159		142+71	58' Rt	21	Pipe Conduit 21IN-Storm Drain	91	Reinforced Concrete Pipe - Class III	21			SP 98(20) 1500 - 5.1
							PVC SDR 35	21			
							Polypropylene Pipe (AASHTO M330, Type S)	24			

FES = Flared End Section

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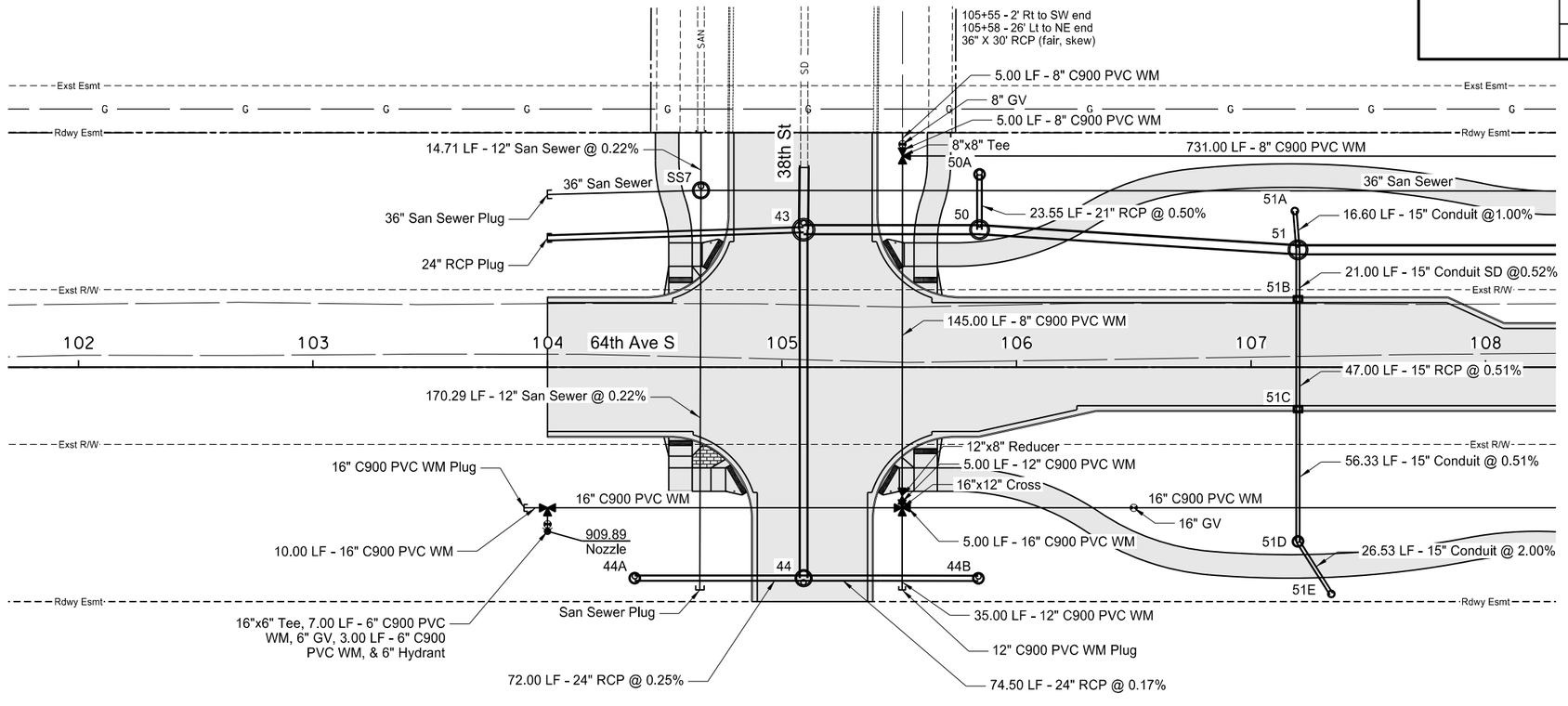
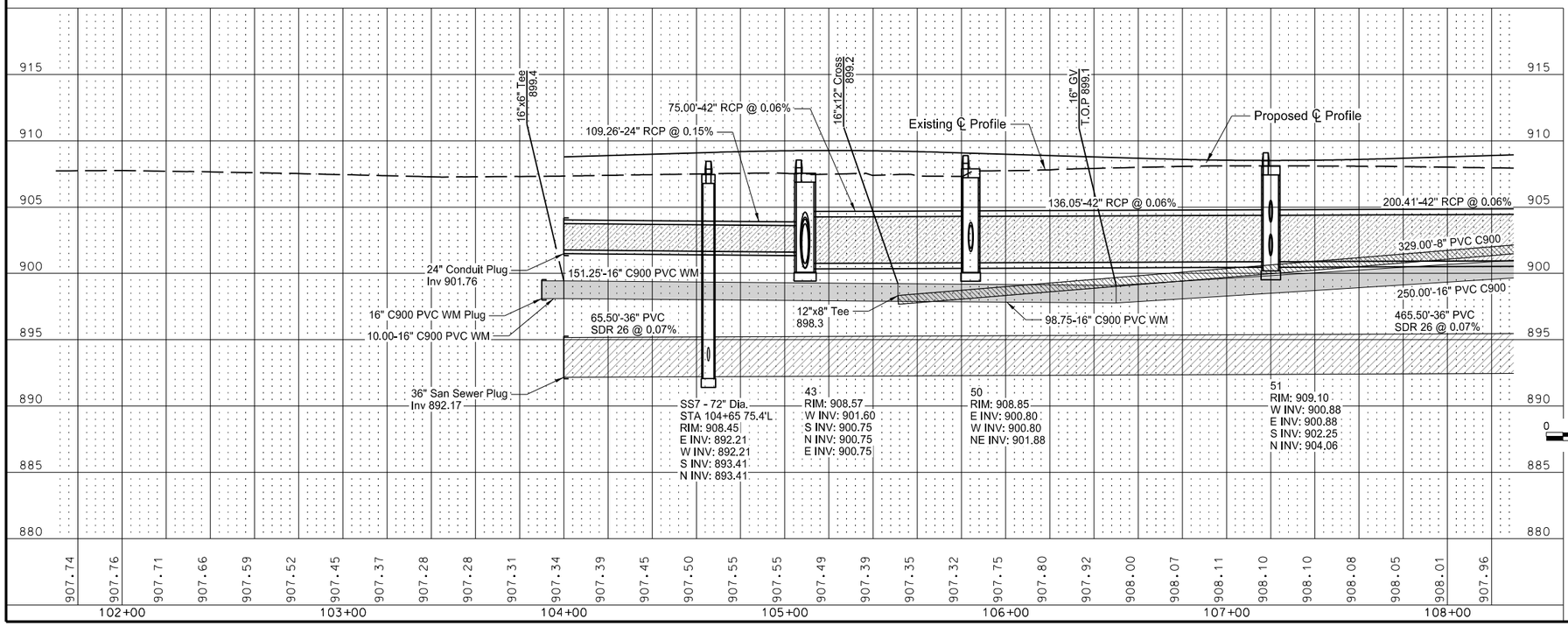
64th Avenue South - 38th St S to 33rd St S

Allowable Pipe List

64th Avenue

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	55	1





SPEC	CODE	BID ITEM	QTY	UNIT
714	0215	PIPE CONC REINF 15IN CL V-STORM DRAIN		
		51B to 51C	47	LF
714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN		
		Sta 104+00 73.6' Lt to 43	109	LF
		44A to 44	72	LF
		44 to 44B	75	LF
714	1002	PIPE CONC REINF 42IN CL II-STORM DRAIN		
		43 to 50	75	LF
714	4097	PIPE CONDUIT 15IN-STORM DRAIN		
		51 to 51A	17	LF
		51 to 51B	21	LF
		51C to 51D	56	LF
		51D to 51E	27	LF
714	4103	PIPE CONDUIT 21IN-STORM DRAIN		
		50 to 50A	24	LF
714	4121	PIPE CONDUIT 42IN-STORM DRAIN		
		50 to 51	136	LF
		51 to Sta 108+00 50' Lt	80	LF
714	7175	PIPE PVC 36IN SEWER		
		Sta 104+00 73.6' Rt to S7	65	LF
		S7 to 108+00 75' Rt	335	LF
722	0130	MANHOLE 84IN		
		50, 51	2	EA
722	0140	MANHOLE 96IN		
		43	1	EA
722	0300	MANHOLE SANITARY		
		SS7	1	EA
722	1130	MANHOLE RISER 84IN		
		50, 51	13.5	LF
722	1140	MANHOLE RISER 96IN		
		43	6.1	EA

See Sheet 55-12 for additional quantities.

ALL ELEVATIONS ARE BASED ON THE U.S.G.S VERTICAL DATUM OF 1988. (UNLESS NOTED OTHERWISE)

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GRAPHIC SCALE (in feet)
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1" = 60'

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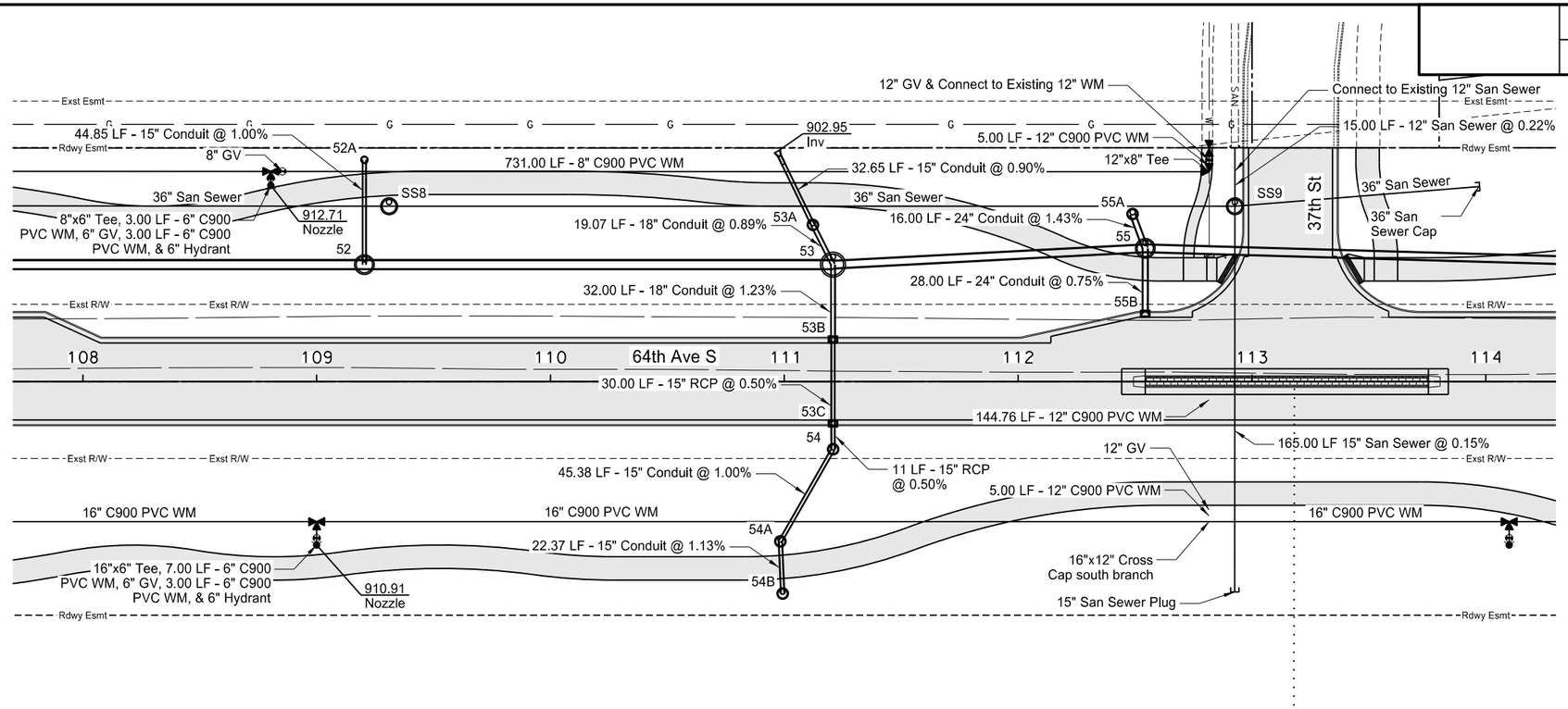
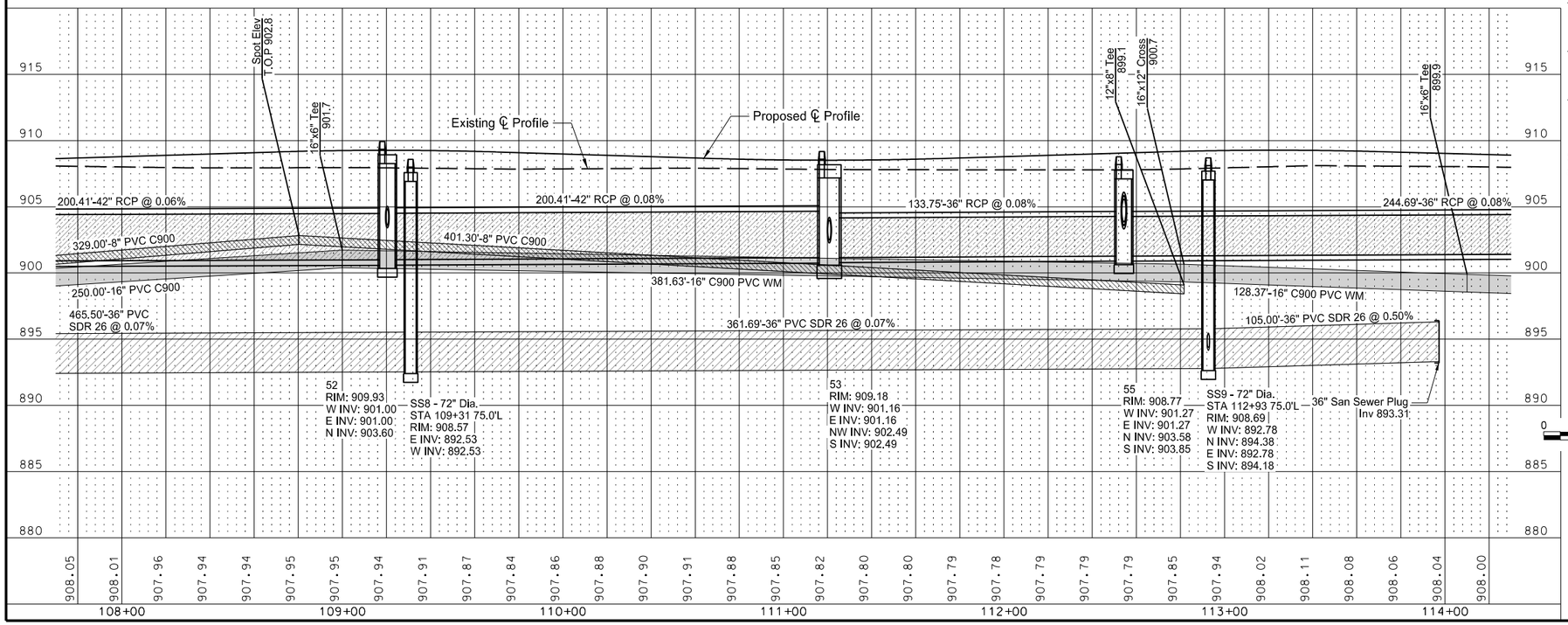
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 102+00 to 108+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	55	2





SPEC CODE	BID ITEM	QTY UNIT
714 0215	PIPE CONC REINF 15IN CL V-STORM DRAIN	
	53B to 53C	36 LF
	53C to 54	11 LF
714 0910	PIPE CONC REINF 36IN CL III-STORM DRAIN	
	55 to Sta 114+00 53' Lt	146 LF
714 4097	PIPE CONDUIT 15IN-STORM DRAIN	
	52 to 52A	45 LF
	53A to 110+98 96.4' Lt	33 LF
	54 to 54A	45 LF
	54A to 54B	22 LF
714 4101	PIPE CONDUIT 18IN-STORM DRAIN	
	53 to 53A	19 LF
	53 to 53B	32 LF
714 4107	PIPE CONDUIT 24IN-STORM DRAIN	
	55 to 55A	16 LF
	55 to 55B	28 LF
714 4117	PIPE CONDUIT 36IN-STORM DRAIN	
	53 to 55	134 LF
714 4121	PIPE CONDUIT 42IN-STORM DRAIN	
	Sta 108+00 50' Lt to 52	120 LF
	52 to 53	200 LF
714 7175	PIPE PVC 36IN SEWER	
	Sta 108+00 75' Lt To SS8	131 LF
	SS8 to SS9	362 LF
	SS9 to Sta 113+97 83.4' Lt	105 LF
722 0100	MANHOLE 48IN	
	54	1 EA
722 0130	MANHOLE 84IN	
	52, 55	2 EA
722 0200	MANHOLE 108IN	
	53	1 EA
722 0300	MANHOLE SANITARY	
	SS8, SS9	2 EA

See Sheet 55-12 for additional quantities.

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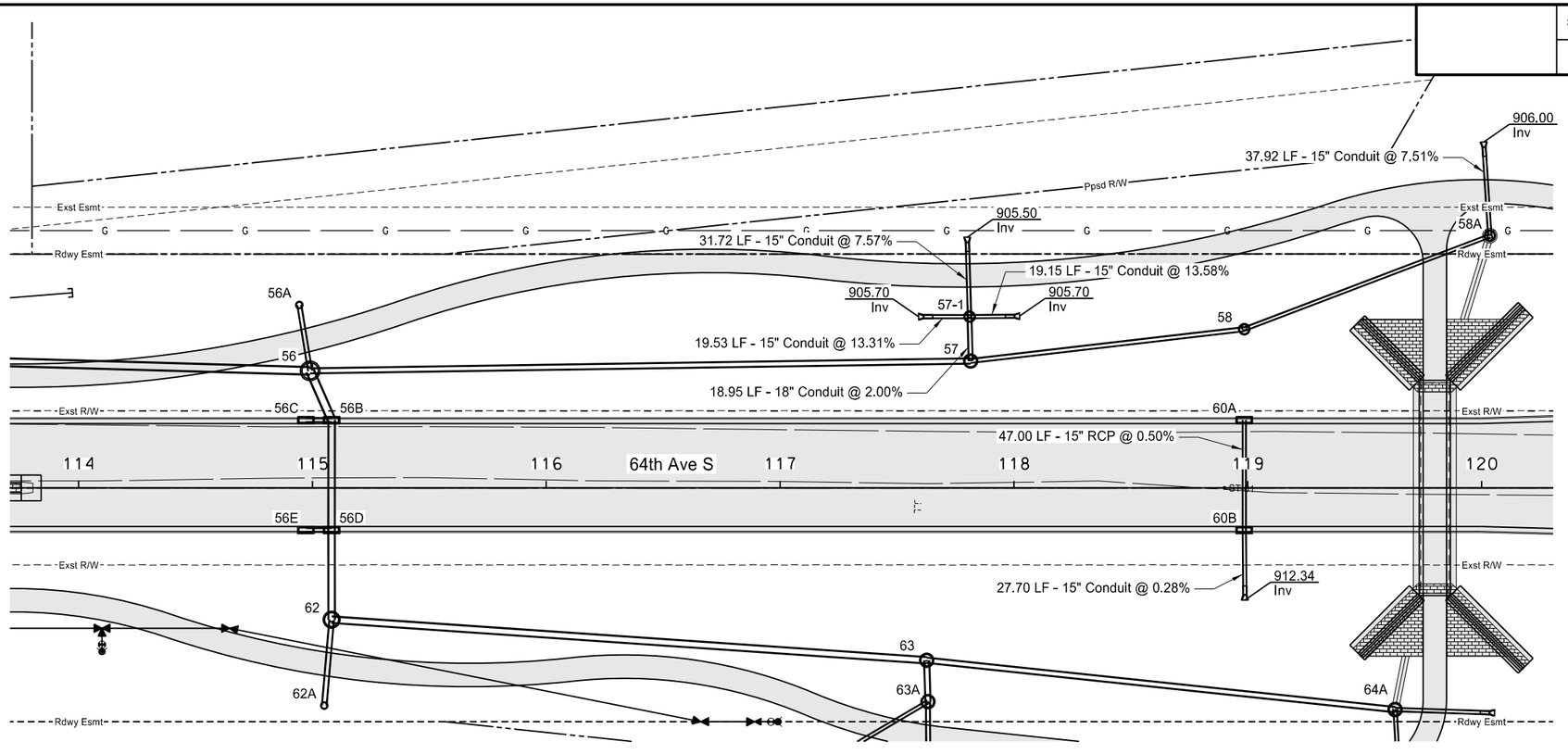
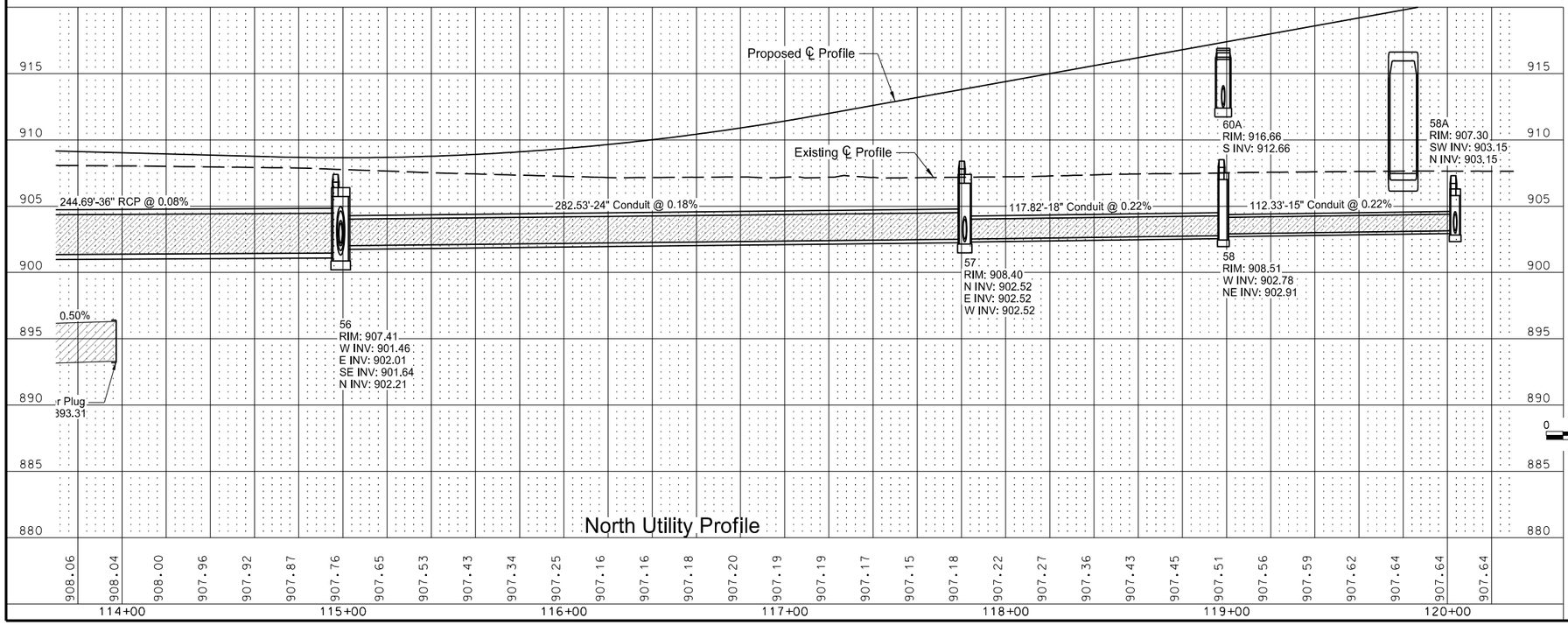
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 108+00 to 114+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	55	3





SPEC	CODE	BID ITEM	QTY	UNIT
714	0215	PIPE CONC REINF 15IN CL V-STORM DRAIN		
		60A to 60B	47	LF
714	0910	PIPE CONC REINF 36IN CL III-STORM DRAIN		
		Sta 114+00 50' Lt to 56	99	LF
714	4097	PIPE CONDUIT 15IN-STORM DRAIN		
		57-1 to Sta 117+61 73' Lt	20	LF
		57-1 to Sta 118+00 73' Lt	19	LF
		57-1 to Sta 117+80 105' Lt	32	LF
		58A to Sta 120+01 146' Lt	38	LF
		58 to 58A	112	LF
		60B to Sta 118+99 46' Rt	28	LF
714	4101	PIPE CONDUIT 18IN-STORM DRAIN		
		57 to 57-1	19	LF
		57 to 58	118	LF
714	4107	PIPE CONDUIT 24IN-STORM DRAIN		
		56 to 57	283	LF
722	100	MANHOLE 48IN		
		57-1, 58	2	EA
722	110	MANHOLE 60IN		
		57	1	EA
722	130	MANHOLE 84IN		
		56	1	EA
722	1100	MANHOLE RISER 48IN		
		57-1, 58	8.4	LF
722	1110	MANHOLE RISER 60IN		
		57	4.4	LF
722	1130	MANHOLE RISER 84IN		
		56	4.5	LF
722	3520	INLET-TYPE 2 DOUBLE		
		60A, 60B	2	EA
722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN		
		58A	1	EA

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0 30 60 90
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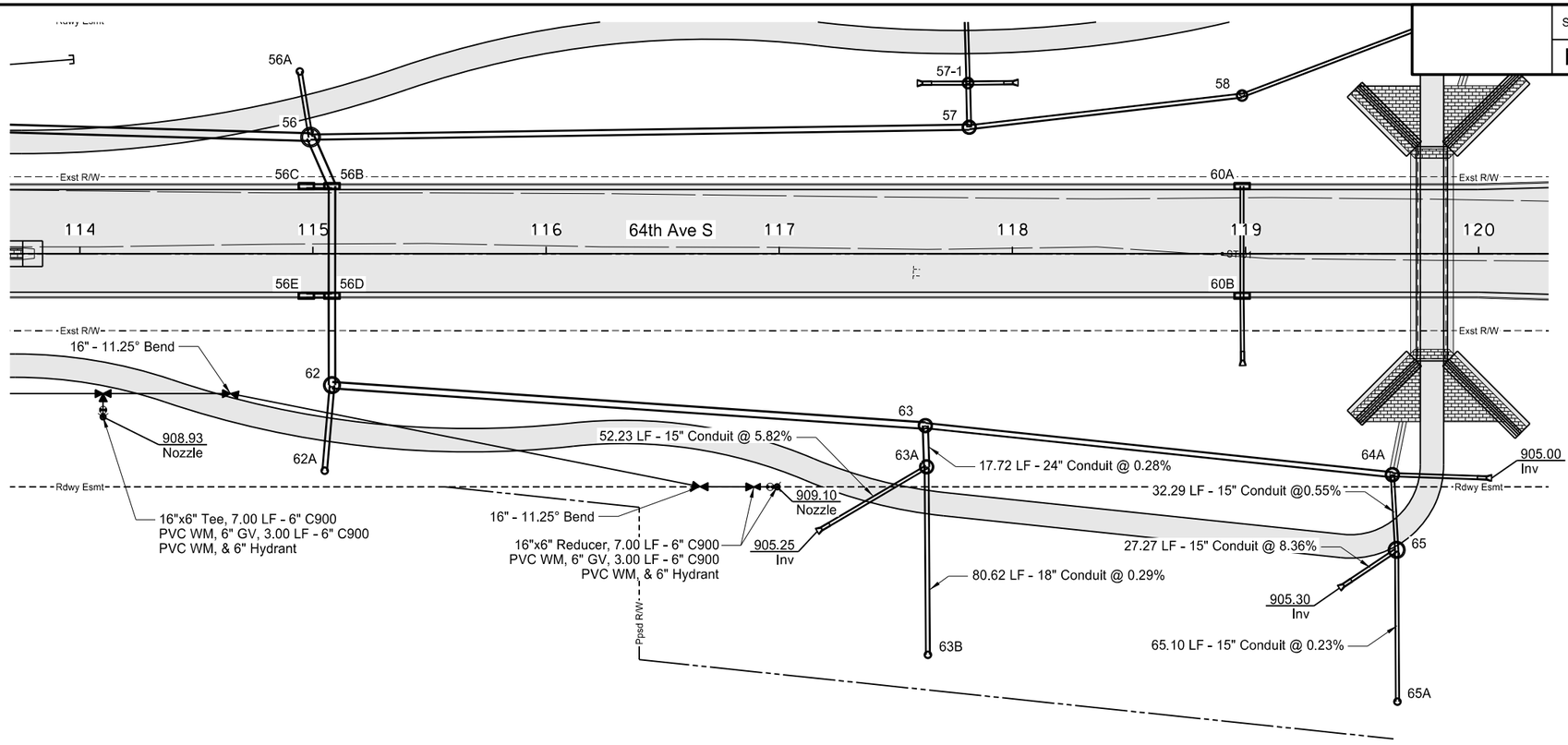
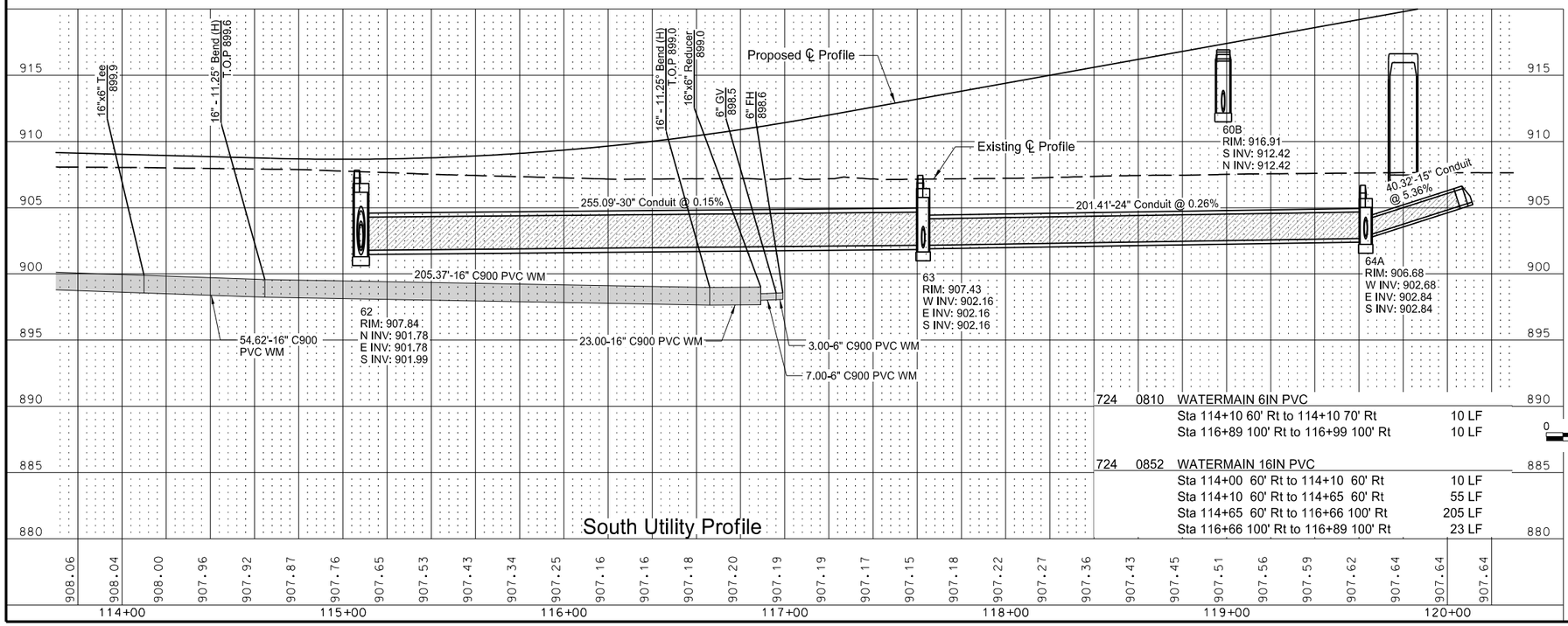
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 114+00 to 120+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	55	4





South Utility Profile

SPEC	CODE	BID ITEM	QTY	UNIT
714	4097	PIPE CONDUIT 15IN-STORM DRAIN		
		63A to Sta 117+18 118' Rt	52	LF
		64A to Sta 120+03 96' Rt	40	LF
		64A to 65	32	LF
		65 to 65A	65	LF
		65 to Sta 119+42 142' Rt	27	LF
714	4101	PIPE CONDUIT 18IN-STORM DRAIN		
		63A to 63B	81	LF
714	4107	PIPE CONDUIT 24IN-STORM DRAIN		
		63 to 63A	18	LF
		63 to 64A	201	LF
714	4112	PIPE CONDUIT 30IN-STORM DRAIN		
		62 to 63	255	LF
722	110	MANHOLE 60IN		
		63	1	EA
722	120	MANHOLE 72IN		
		65	1	EA
722	1110	MANHOLE RISER 60IN		
		63	4.0	LF
722	1120	MANHOLE RISER 72IN		
		65	4.0	LF
722	3800	INLET SPECIAL CATCH BASIN-TYPE A 60IN		
		63A, 64A	2	EA
722	4025	INLET CATCH BASIN BEEHIVE		
		63B, 65A	2	EA
724	0210	FITTINGS-DUCTILE IRON		
		Sta 114+10 60' Rt (16"x6" - Tee)	228	LBS
		Sta 114+65 60' Rt (16" - 11.25° Bend)	148	LBS
		Sta 116+66 100' Rt (16" - 11.25° Bend)	148	LBS
		Sta 116+89 100' Rt (16"x6" Reducer)	124	LBS
724	0300	GATE VALVE & BOX 6IN		
		Sta 114+10 67' Rt	1	EA
		Sta 116+96 100' Rt	1	EA
724	0411	6IN HYDRANT		
		Sta 114+10 70' Rt, Sta 116+99 100' Rt	2	EA
724	0810	WATERMAIN 6IN PVC		
		Sta 114+10 60' Rt to 114+10 70' Rt	10	LF
		Sta 116+89 100' Rt to 116+99 100' Rt	10	LF
724	0852	WATERMAIN 16IN PVC		
		Sta 114+00 60' Rt to 114+10 60' Rt	10	LF
		Sta 114+10 60' Rt to 114+65 60' Rt	55	LF
		Sta 114+65 60' Rt to 116+66 100' Rt	205	LF
		Sta 116+66 100' Rt to 116+89 100' Rt	23	LF

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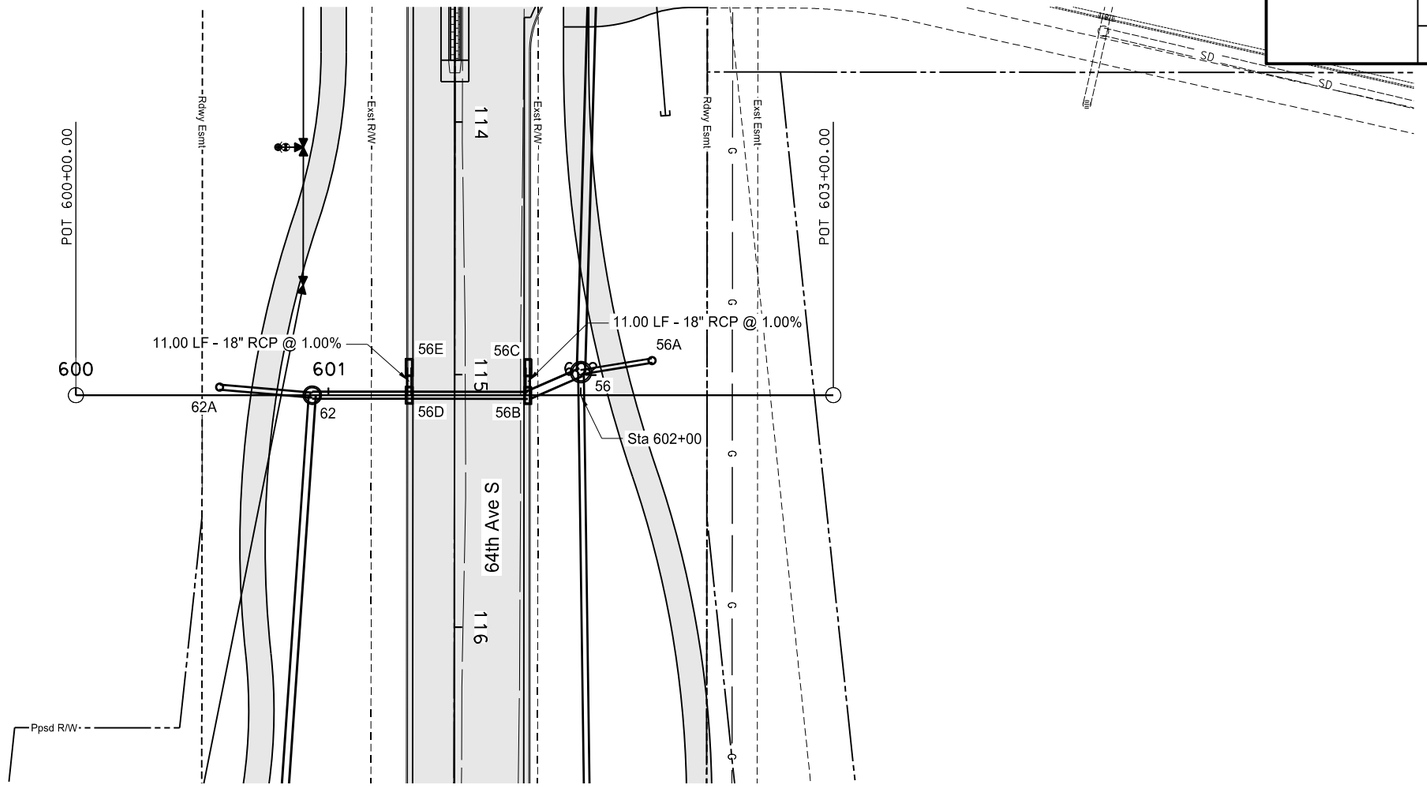
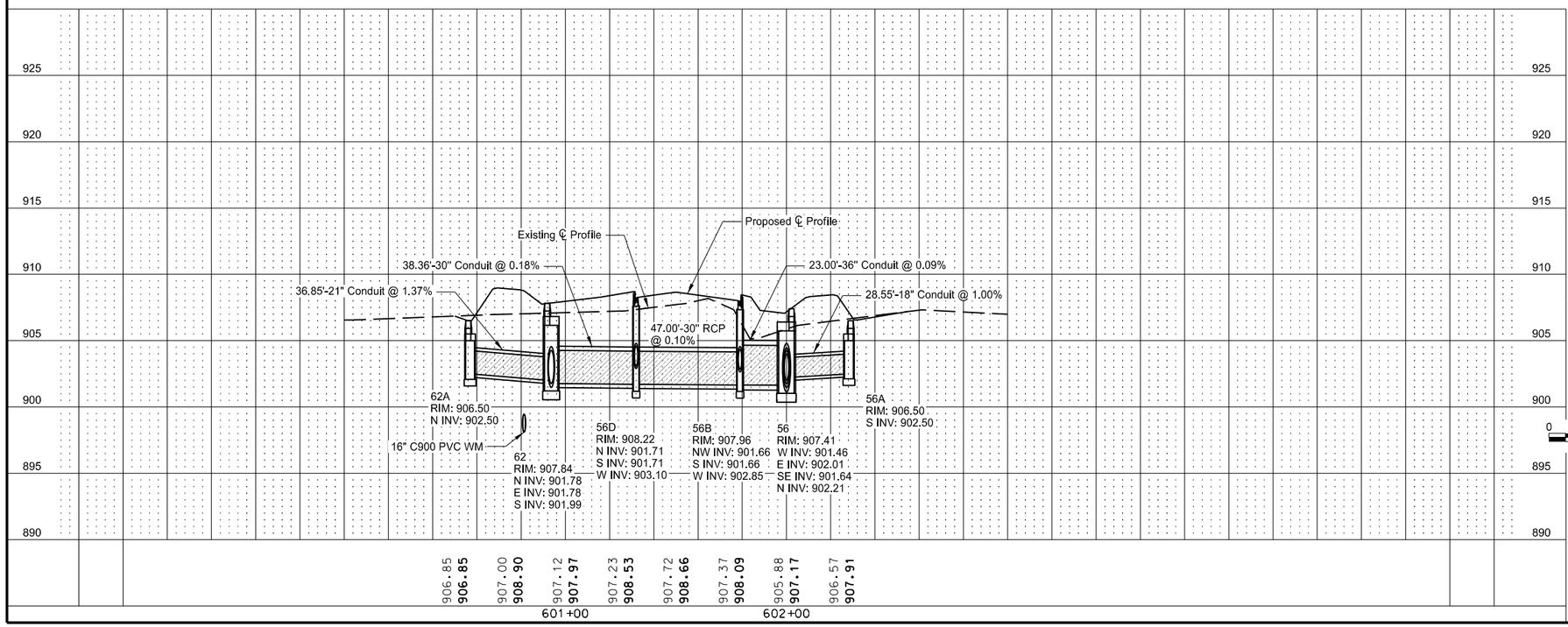
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 114+00 to 120+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	55	5





SPEC	CODE	BID ITEM	QTY	UNIT
714	0325	PIPE CONC REINF 18IN CL IV-STORM DRAIN		
		56C to 56B	11	LF
		56E to 56D	11	LF
714	0825	PIPE CONC REINF 30IN CL III-STORM DRAIN		
		56B to 56D	47	LF
714	4101	PIPE CONDUIT 18IN-STORM DRAIN		
		56 to 56A	29	LF
714	4103	PIPE CONDUIT 21IN-STORM DRAIN		
		62 to 62A	37	LF
714	4112	PIPE CONDUIT 30IN-STORM DRAIN		
		56D to 62	38	LF
714	4117	PIPE CONDUIT 36IN-STORM DRAIN		
		56 to 56B	23	LF
722	120	MANHOLE 72IN		
		62	1	EA
722	1120	MANHOLE RISER 72IN		
		62	4.6	LF
722	3520	INLET-TYPE 2 DOUBLE		
		56B, 56C, 56D, 56E	4	EA
722	4025	INLET CATCH BASIN BEEHIVE		
		56A, 62A	2	EA

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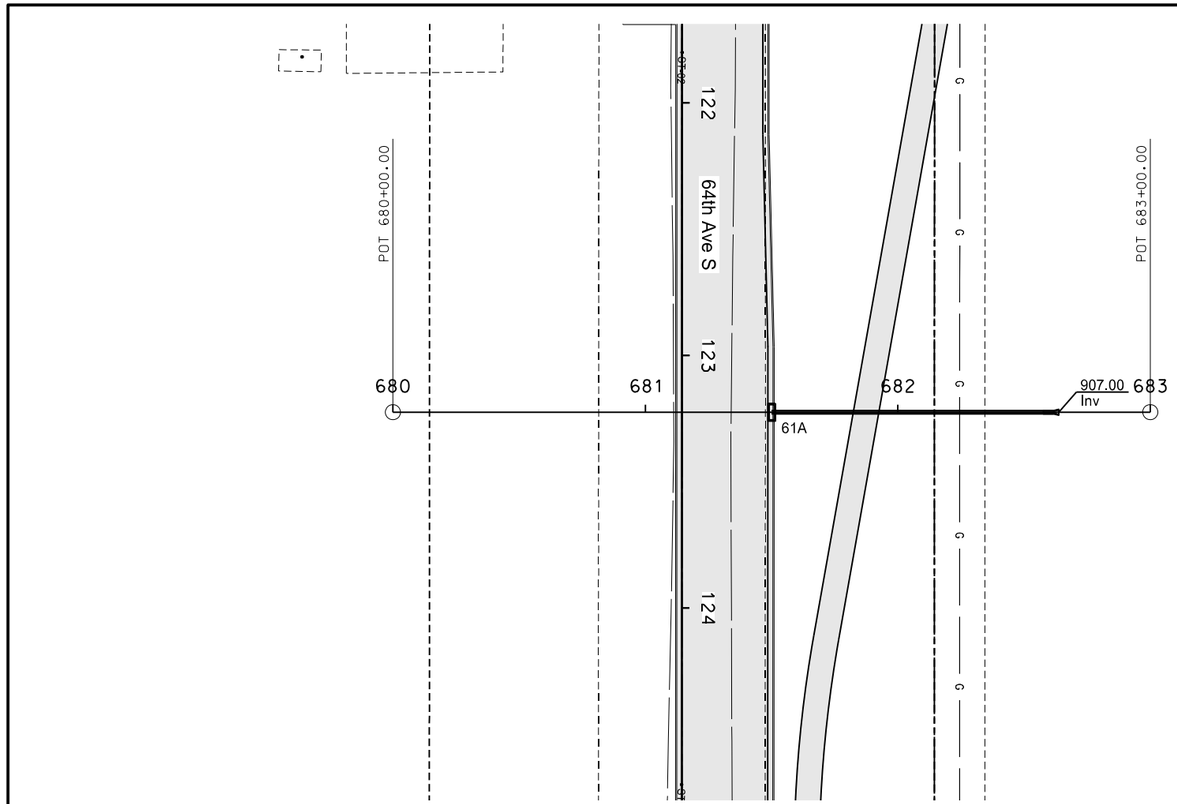
64th Avenue South - 38th St S to 33rd St S

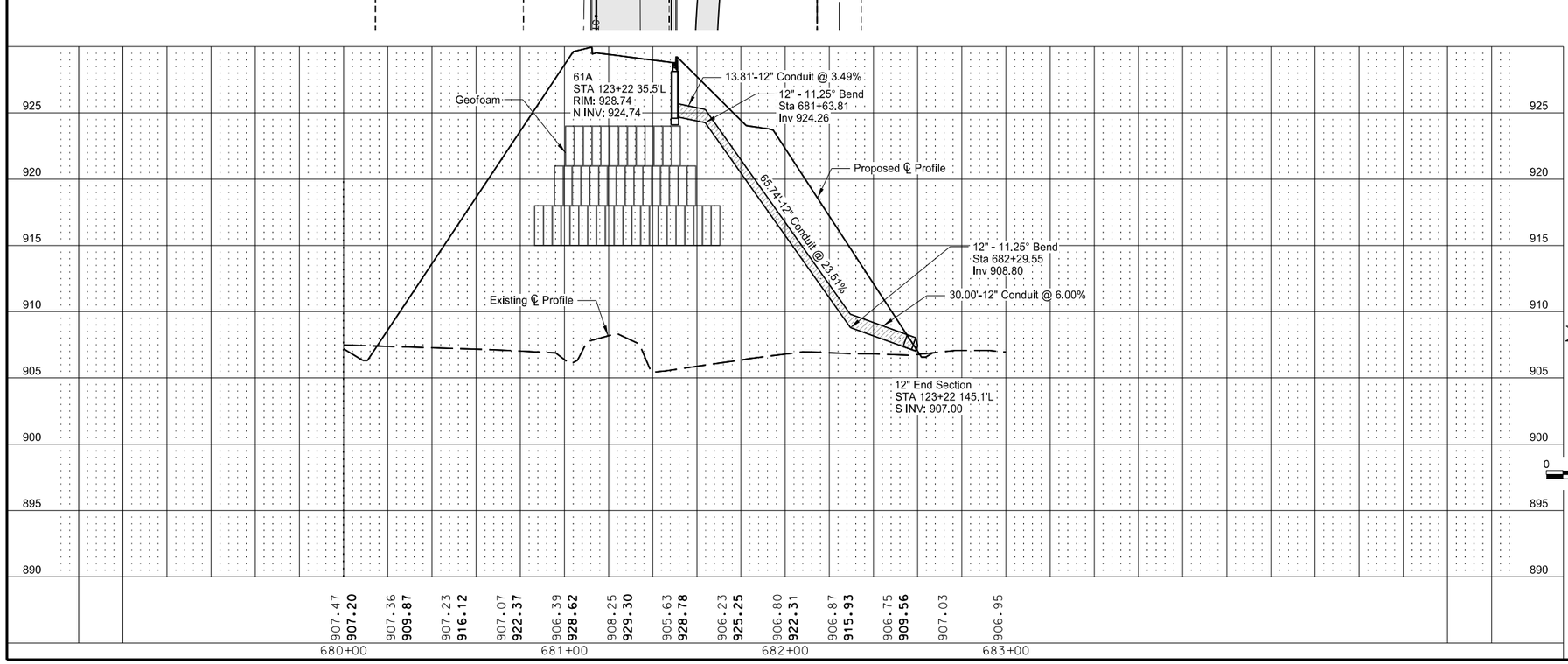
Plan & Profile

Storm Crossing 37th St
Sta 600+00 to 603+00 (PRST37TH)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	55	6

SPEC	CODE	BID ITEM	QTY	UNIT
714	4092	PIPE CONDUIT 12IN-STORM DRAIN		
		61A to Sta 682+60 0.0 Rt	110	LF
722	3520	INLET-TYPE 2 DOUBLE		
		61A	1	EA





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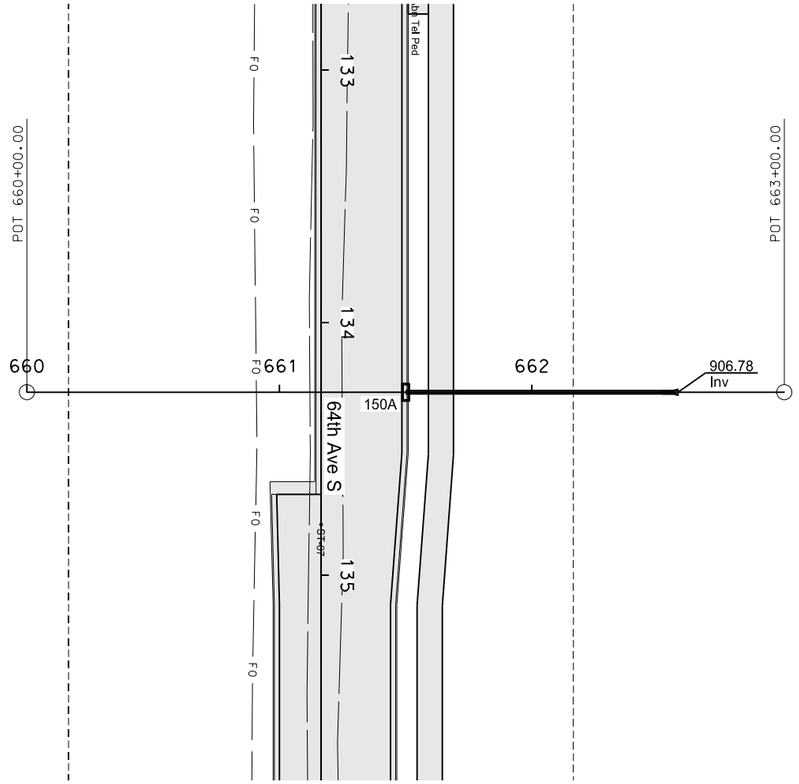
64th Avenue South - 38th St S to 33rd St S

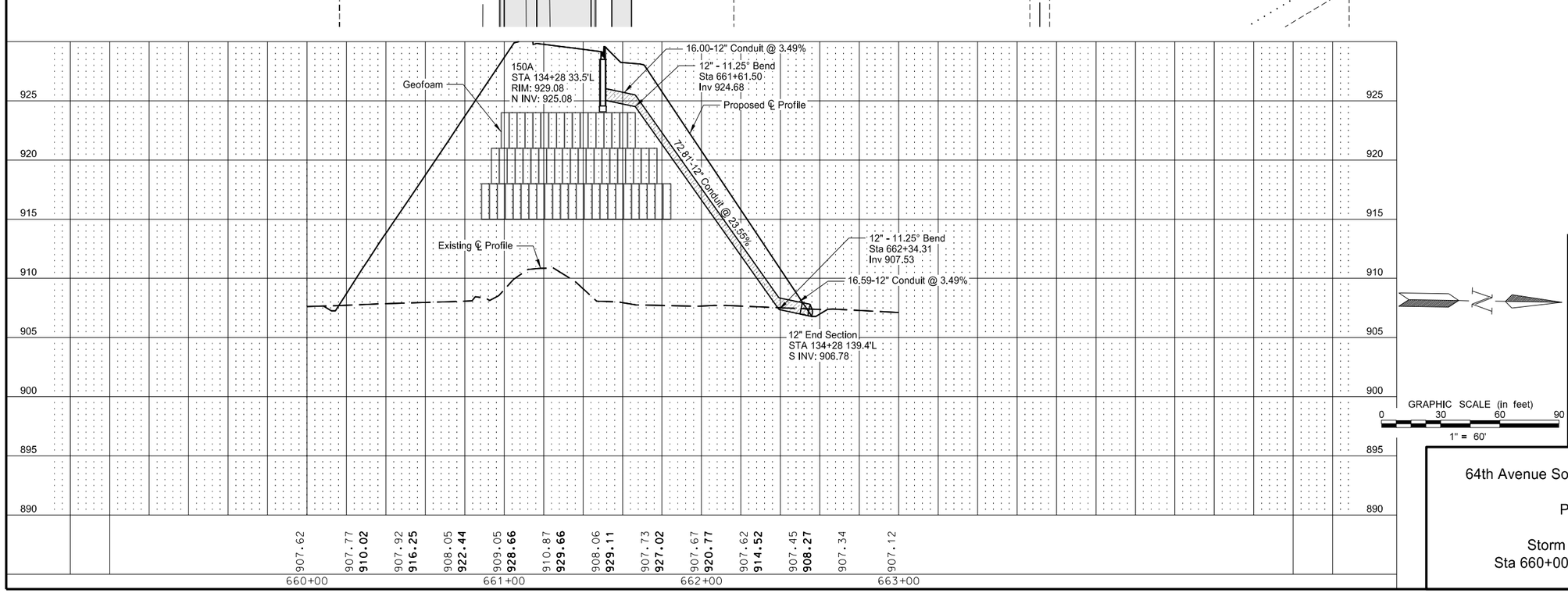
Plan & Profile

Storm Crossing Station 123
Sta 680+00 to 683+00 (PRST123)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	55	7

SPEC	CODE	BID ITEM	QTY	UNIT
714	4092	PIPE CONDUIT 12IN-STORM DRAIN		
		150A to Sta 662+55 0.0 Rt	106	LF
722	3520	INLET-TYPE 2 DOUBLE		
		150A	1	EA





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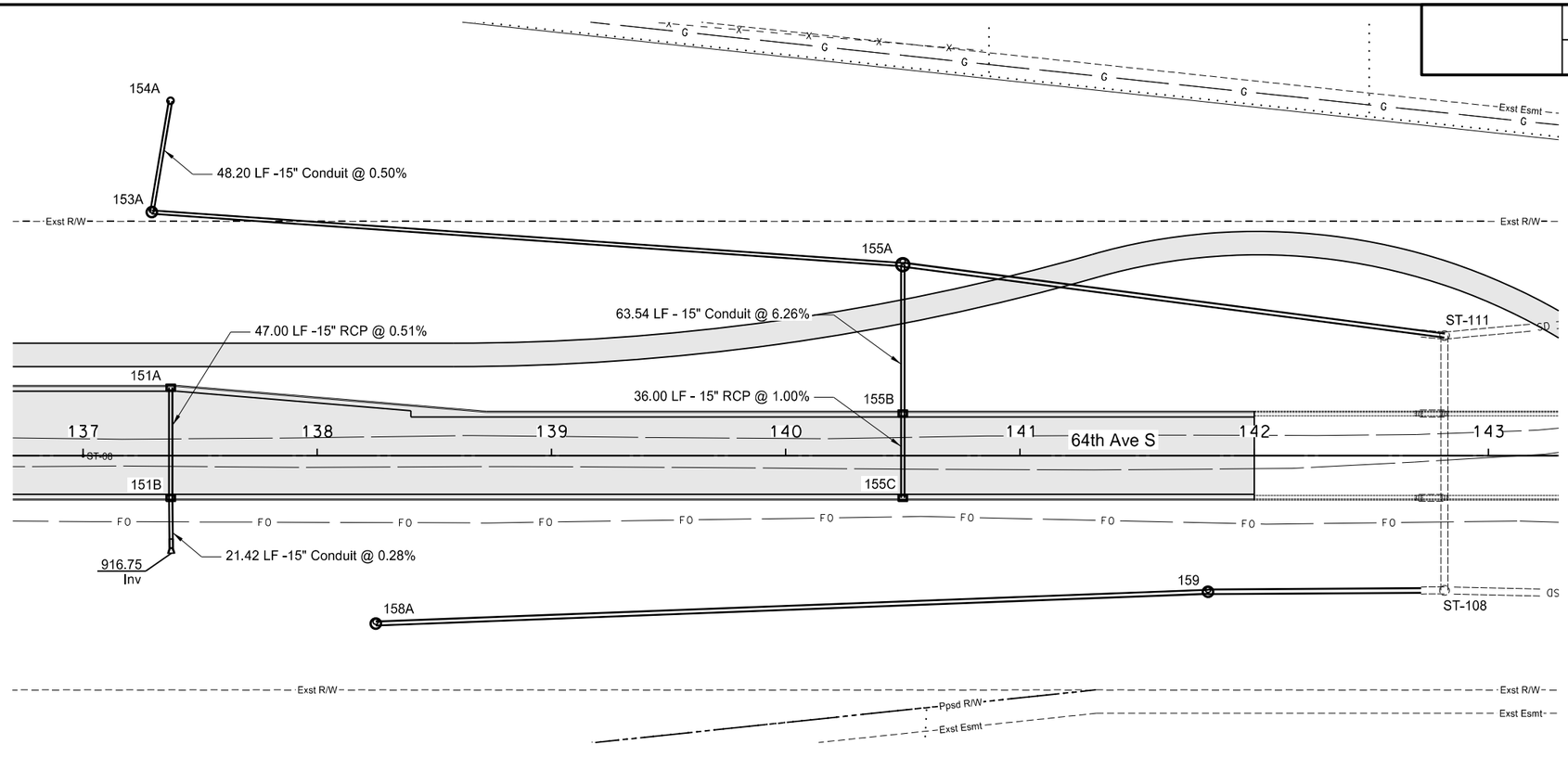
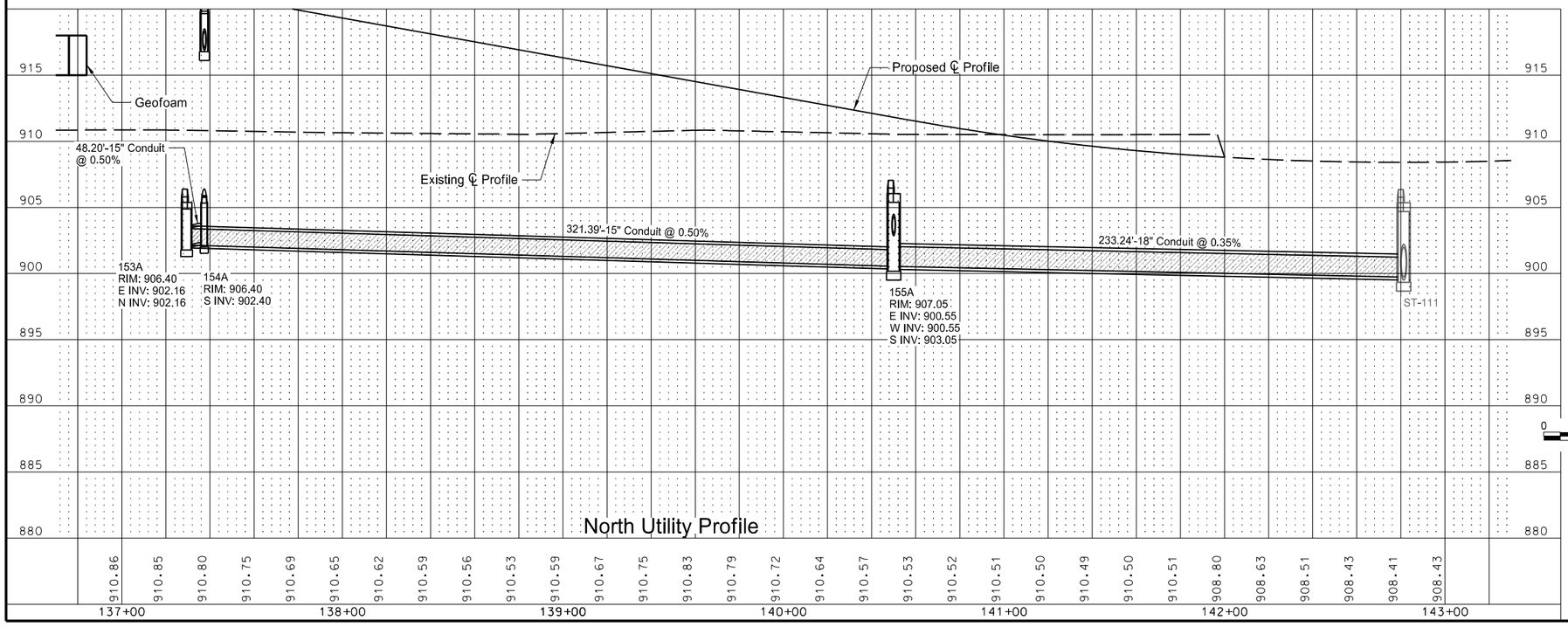
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

Storm Crossing Sta 134
Sta 660+00 to 663+00 (PRST134)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	55	8





North Utility Profile

SPEC	CODE	BID ITEM	QTY	UNIT
714	0215	PIPE CONC REINF 15IN CL V-STORM DRAIN		
		151A to 151B	47	LF
		155B to 155C	36	LF
714	4097	PIPE CONDUIT 15IN-STORM DRAIN		
		151B to Sta 137+38 39' Rt	21	LF
		153A to 155A	321	LF
		153A to 154A	48	LF
		155A to 155B	64	LF
714	4101	PIPE CONDUIT 18IN-STORM DRAIN		
		155A to Sta 142+81.47 54' Lt	233	LF
722	3510	INLET-TYPE 2		
		151A, 151B, 155B, 155C	4	EA
722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN		
		153A	1	EA
722	3800	INLET SPECIAL CATCH BASIN-TYPE A 60IN		
		155A	1	EA
722	4025	INLET CATCH BASIN BEEHIVE		
		154A	1	EA

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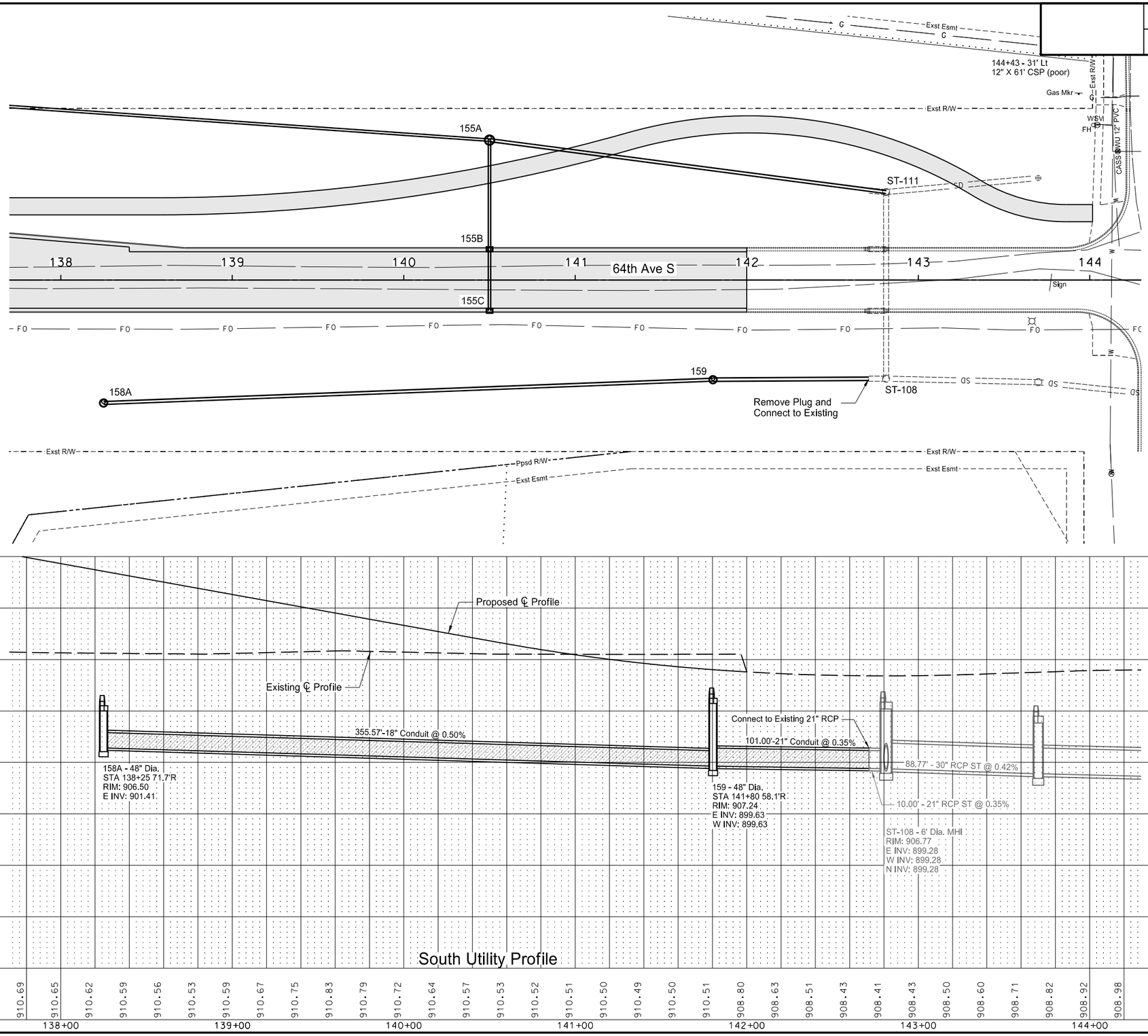
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 137+00 to 143+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	55	9

SPEC	CODE	BID ITEM	QTY	UNIT
714	4101	PIPE CONDUIT 18IN-STORM DRAIN		
		158A to 159	356	LF
714	4103	PIPE CONDUIT 21IN-STORM DRAIN		
		159 to Sta 142+71 58' Rt	91	LF
722	100	MANHOLE 48IN		
		159	1	EA
722	1100	MANHOLE RISER 48IN		
		159	6.3	LF
722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN		
		158A	1	EA



South Utility Profile

ALL ELEVATIONS ARE BASED ON THE U.S.G.S VERTICAL DATUM OF 1988. (UNLESS NOTED OTHERWISE)

N

GRAPHIC SCALE (in feet)
0 30 60 90
1" = 60'

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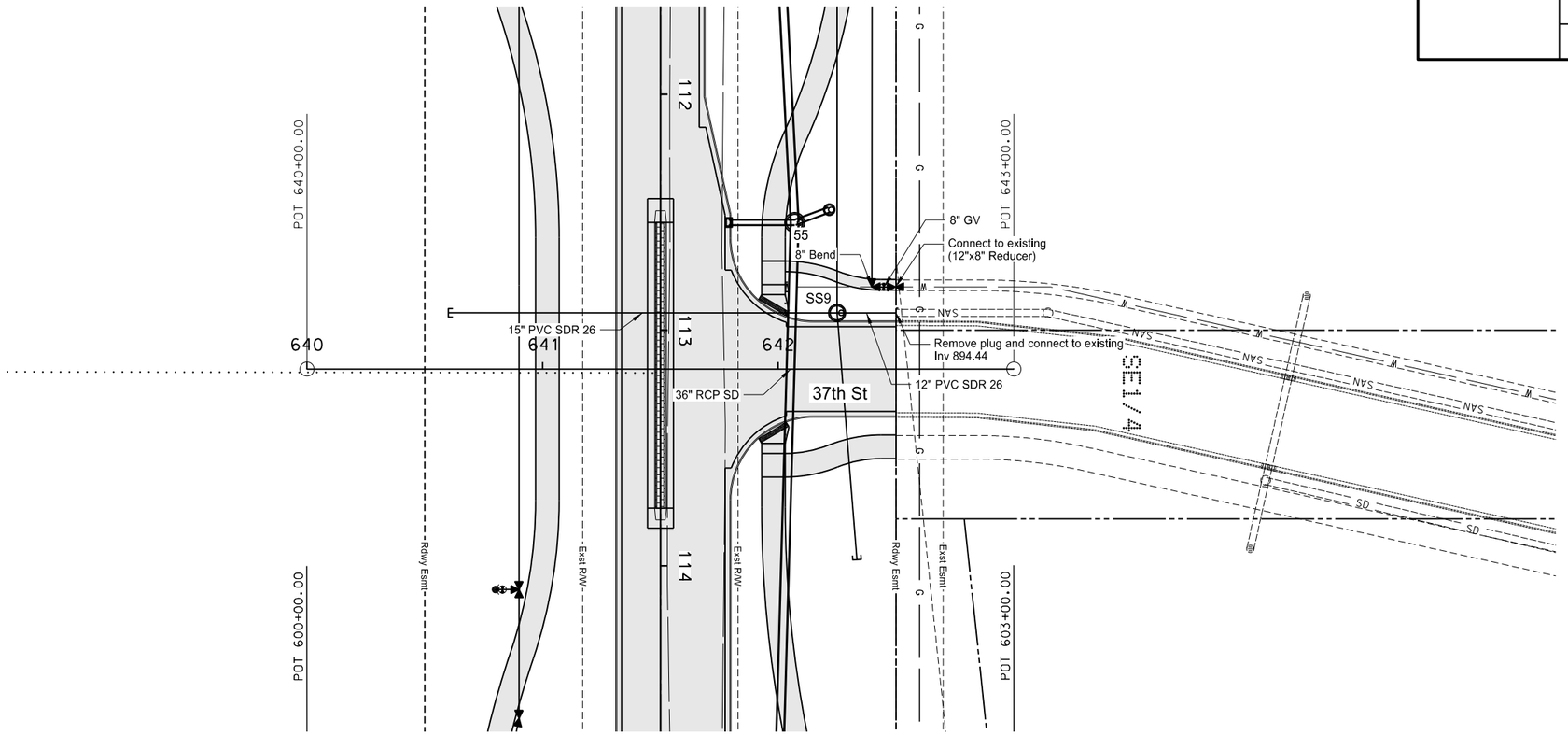
64th Avenue South - 38th St S to 33rd St S

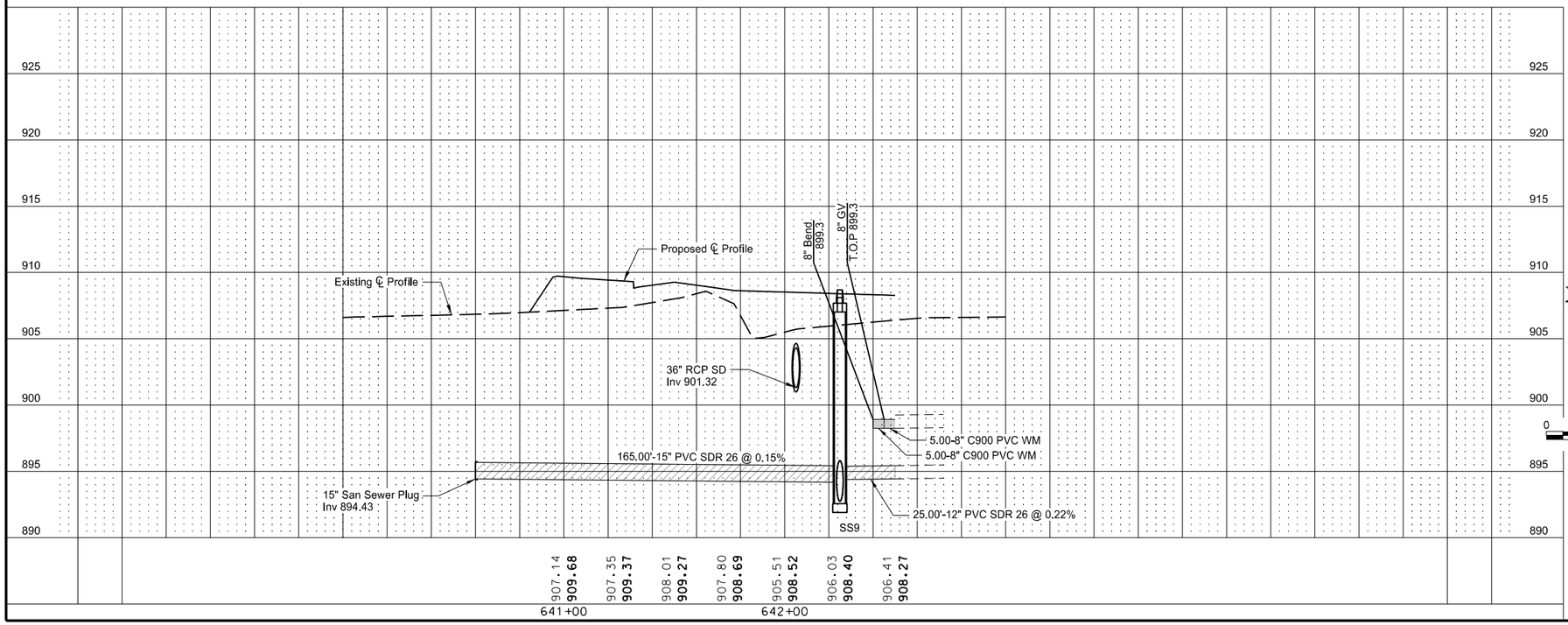
Plan & Profile

64th Avenue South
Sta 138+00 to 144+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	55	10

SPEC	CODE	BID ITEM	QTY	UNIT
724	210	FITTINGS-DUCTILE IRON		
		Sta 642+40 - 34.8' Lt (8" 90° Bend))	57	LBS
		Sta 642+50 - 34.8' Lt (12"x8" Reducer)	57	LBS
724	0310	GATE VALVE & BOX 8IN		
		Sta 642+87 34.8' Lt	1	EA
724	0830	WATERMAIN 8IN PVC		
		Sta 642+40 - 34.8' Lt to 642+50 - 34.8' Lt	10	LF
724	1117	12IN SANITARY SEWER PIPE		
		Sta 642+50 23.8' Lt To SS9	25	LF
724	1118	15IN SANITARY SEWER PIPE		
		SS9 to Sta 640+60 23.8' Lt	165	LF





ALL ELEVATIONS ARE BASED ON THE U.S.G.S VERTICAL DATUM OF 1988. (UNLESS NOTED OTHERWISE)

GRAPHIC SCALE (in feet)
0 30 60 90
1" = 60'

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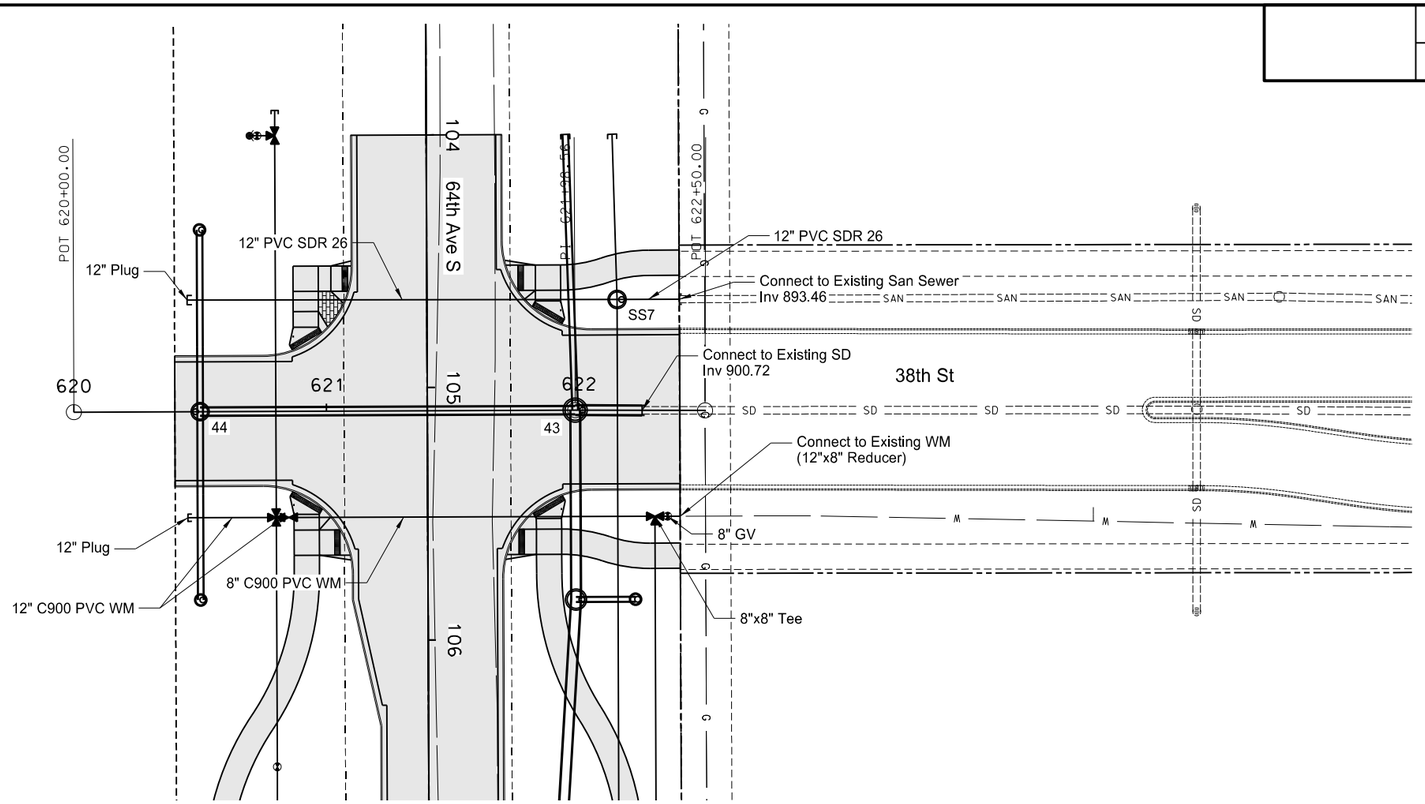
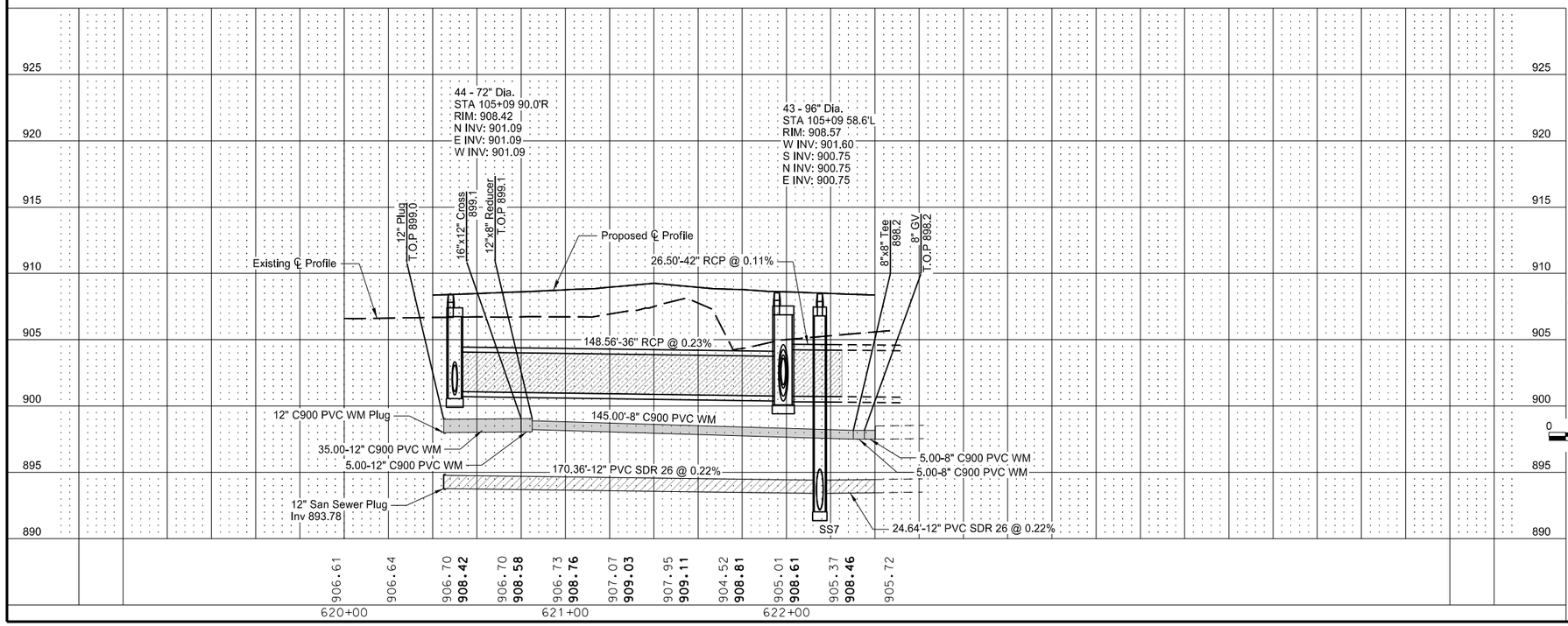
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

Storm Crossing 37th St Intersection
Sta 640+00 to 643+00 (PRST37THINTSCN)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	55	11





SPEC	CODE	BID ITEM	QTY	UNIT
714	0910	PIPE CONC REINF 36IN CL III-STORM DRAIN		
		44 to 43	149	LF
714	1002	PIPE CONC REINF 42IN CL II-STORM DRAIN		
		43 to Sta 622+25 0.0' Lt	26	LF
722	120	MANHOLE 72IN		
		44	1	EA
722	1120	MANHOLE RISER 72IN		
		44	5.5	LF
724	0210	FITTINGS-DUCTILE IRON		
		Sta 622+40 42' Rt (12"x8" Reducer)	57	LBS
		Sta 622+30 42' Rt (8"x8" - Tee)	86	LBS
		Sta 620+85 42' Rt (12"x8" Reducer)	57	LBS
		Sta 620+45 42' Rt (12" - Plug)	46	LBS
724	0310	GATE VALVE & BOX 8IN		
		Sta 622+35 42' Rt	1	EA
724	0830	WATERMAIN 8IN PVC		
		620+85 42' Rt to 622+40 42' Rt	155	LF
724	0850	WATERMAIN 12IN PVC		
		Sta 620+45 42' Rt to 620+85 42' Rt	40	LF
724	1117	12IN SANITARY SEWER PIPE		
		Sta 620+45 44.2' Lt To SS7	170	LF
		SS7 To Sta 622+40 44' Lt	25	LF

ALL ELEVATIONS ARE BASED ON THE U.S.G.S VERTICAL DATUM OF 1988. (UNLESS NOTED OTHERWISE)

GRAPHIC SCALE (in feet)
0 30 60 90
1" = 60'

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64th Avenue South - 38th St S to 33rd St S

Plan & Profile

Storm Crossing 38th St Intersection
Sta 620+00 to 622+50 (PRST38THINTSCN)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	55	12

Sheet 55-1

SPEC	CODE	BID ITEM	QTY	UNIT
722	3510	INLET-TYPE 2		
		51B, 51C	2	EA
722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN		
		44A, 44B, 50A, 51D	4	EA
722	4025	INLET CATCH BASIN BEEHIVE		
		51A, 51E	2	EA
724	0210	FITTINGS-DUCTILE IRON		
		Sta 103+90 60' Rt (16" - Plug)	95	LBS
		Sta 104+00 60' Rt (16"x6" - Tee)	228	LBS
		Sta 105+51 60' Rt (16"x12" - Cross)	306	LBS
724	0300	GATE VAVE & BOX 6IN		
		Sta 104+00 - 67' Rt	1	EA
724	0317	GATE VAVE & BOX 16IN		
		Sta 106+50 60' Rt	1	EA
724	0411	6IN HYDRANT		
		Sta 104+00 70' Rt	1	EA
724	0810	WATERMAIN 6IN PVC		
		Sta 104+00 60' Rt to 104+00 70' Rt	10	LF
724	0830	WATERMAIN 8IN PVC		
		Sta 105+51 90' Lt to 108+00 90' Lt	248	LF
724	0852	WATERMAIN 16IN PVC		
		Sta 103+90 60' Rt to 108+00 60' Rt	410	LF

Sheet 55-2

SPEC	CODE	BID ITEM	QTY	UNIT
722	1100	MANHOLE RISER 48IN		
		54	4.2	LF
722	1130	MANHOLE RISER 84IN		
		52, 55	13.6	LF
722	1200	MANHOLE RISER 108IN		
		53	6.3	LF
722	3510	INLET-TYPE 2		
		53B, 53C, 55B	3	EA
722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN		
		53A, 54A, 54B, 55A	4	EA
722	4025	INLET CATCH BASIN BEEHIVE		
		52A	1	EA
724	0210	FITTINGS-DUCTILE IRON		
		Sta 108+80 - 90' Lt (8"x6" - Tee)	72	LBS
		Sta 109+00 - 60' Rt (16"x6" - Tee)	228	LBS
724	0300	GATE VAVE & BOX 6IN		
		Sta 108+80 - 87' Lt	1	EA
		Sta 109+00 - 67' Rt	1	EA
724	0310	GATE VALVE & BOX 8IN		
		Sta 108+85 - 90' Lt	1	EA
724	0411	6IN HYDRANT		
		Sta 108+80 84' Lt	1	EA
		Sta 109+00 70' Rt	1	EA
724	0810	WATERMAIN 6IN PVC		
		Sta 108+80 90' Lt to Sta 108+80 84' Lt	6	LF
		Sta 109+00 60' Rt to Sta 109+00 70' Rt	10	LF
724	0830	WATERMAIN 8IN PVC		
		Sta 108+00 90' Lt to 112+82 90' Lt	483	LF
724	0852	WATERMAIN 16IN PVC		
		Sta 108+00 60' Rt To Sta 114+00 60' Rt	600	LF

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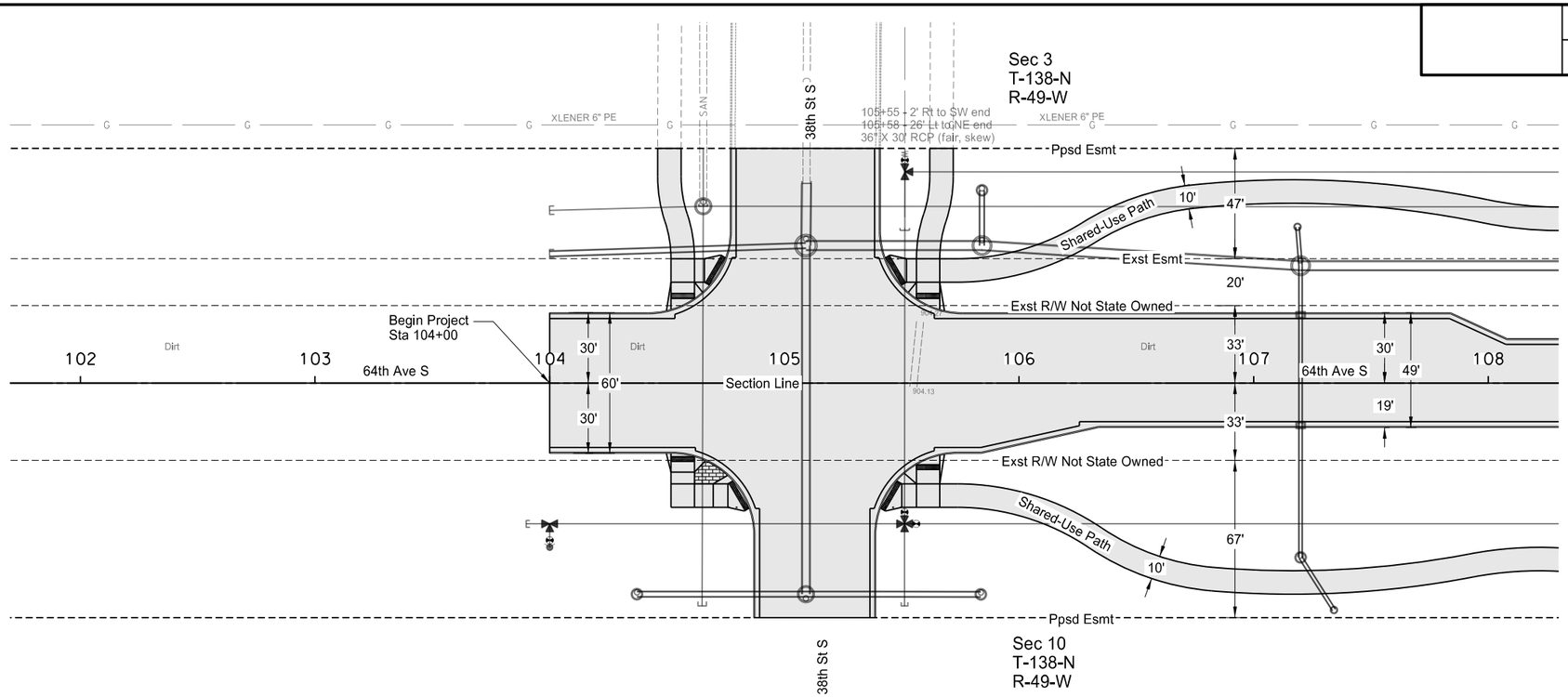
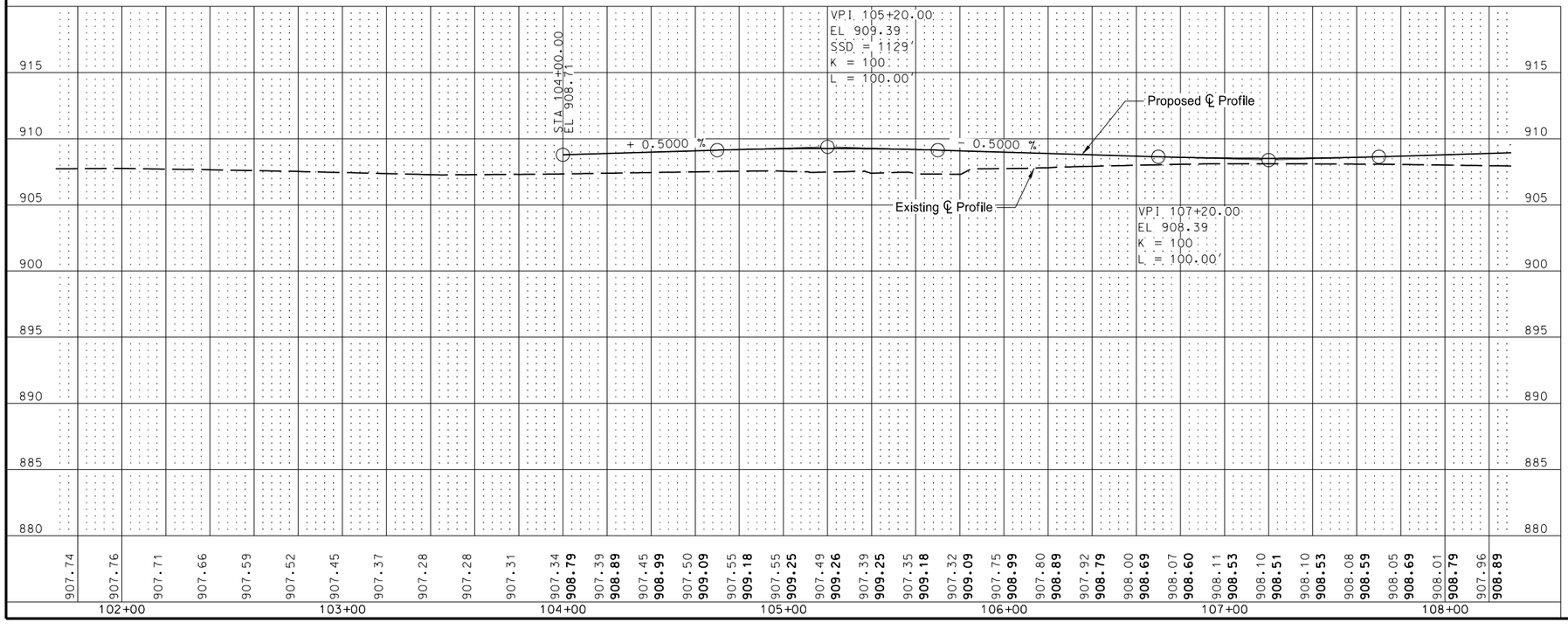
64th Avenue South - 38th St S to 33rd St S

Quantity Overflow

64th Avenue

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	1





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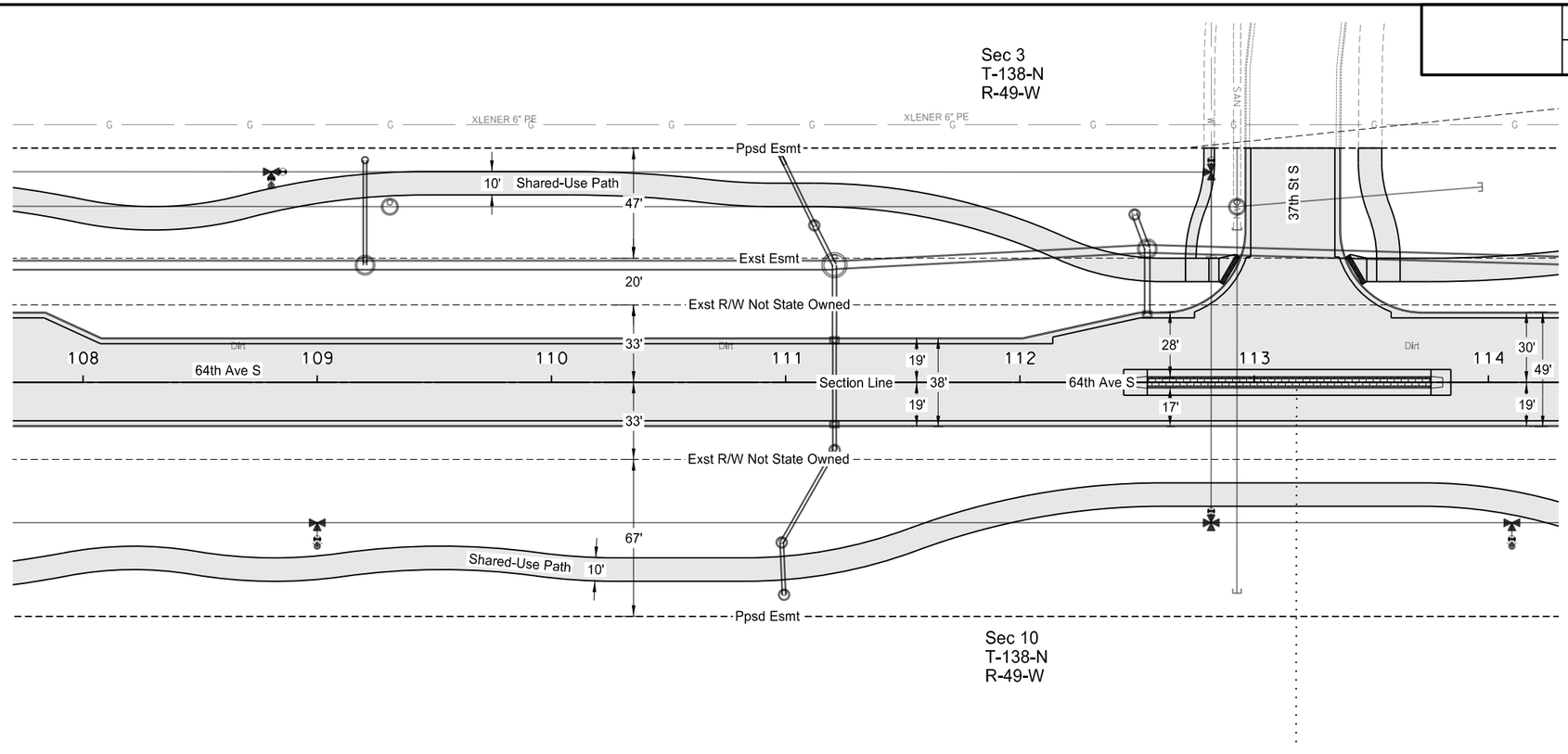
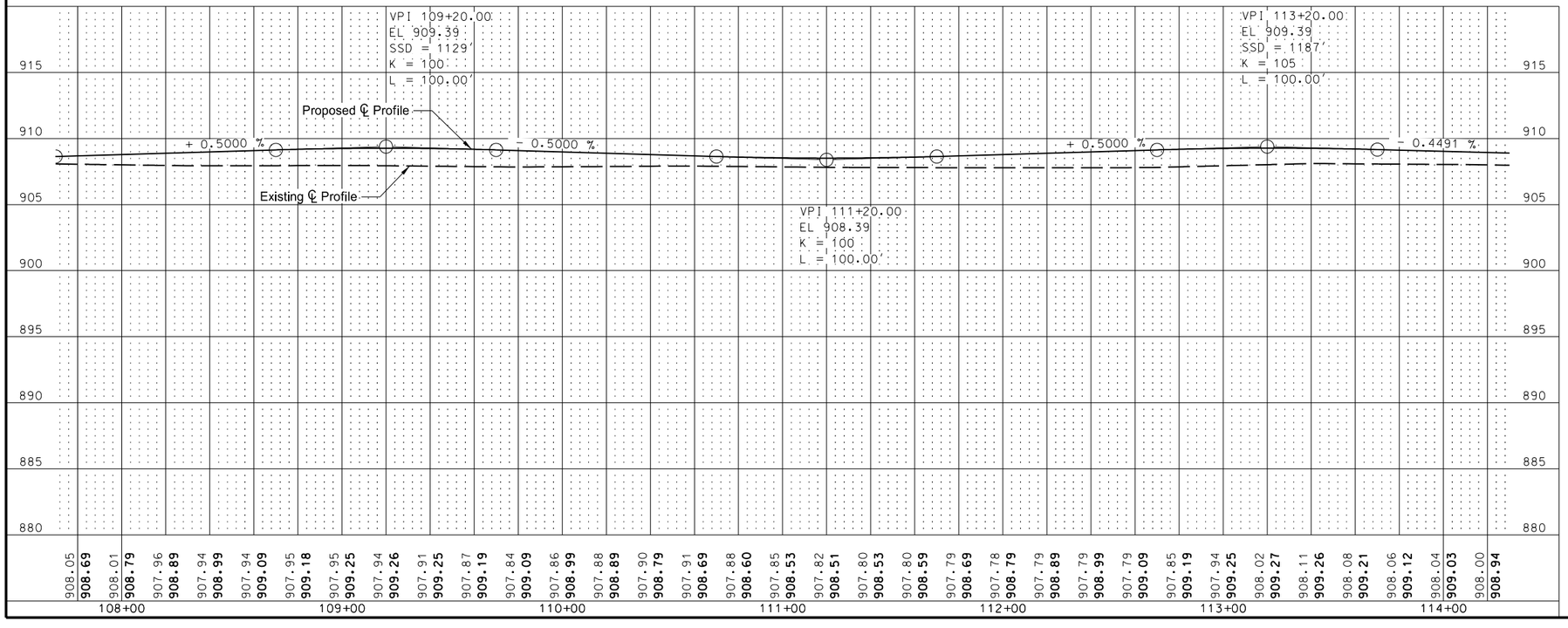
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 104+00 to 108+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	2





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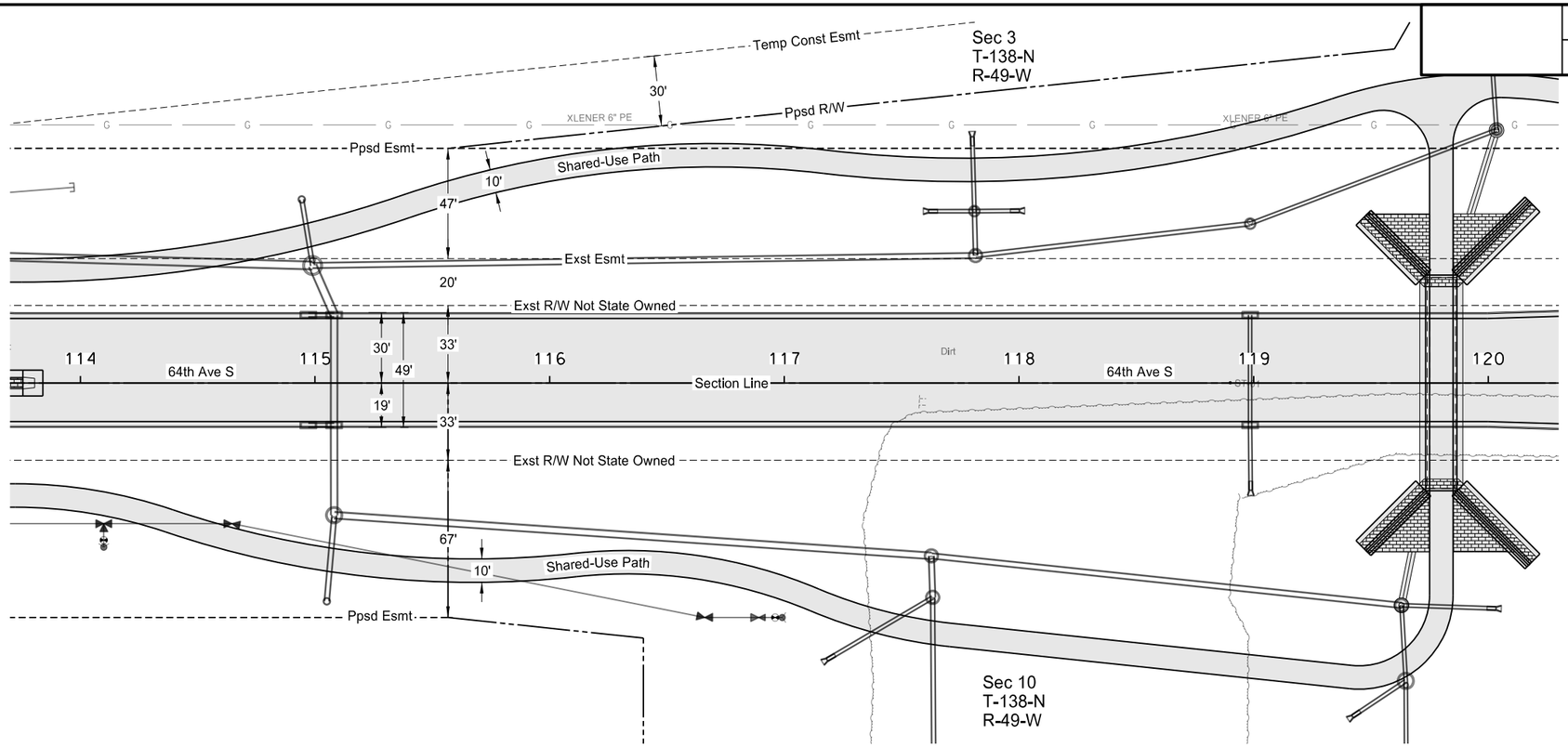
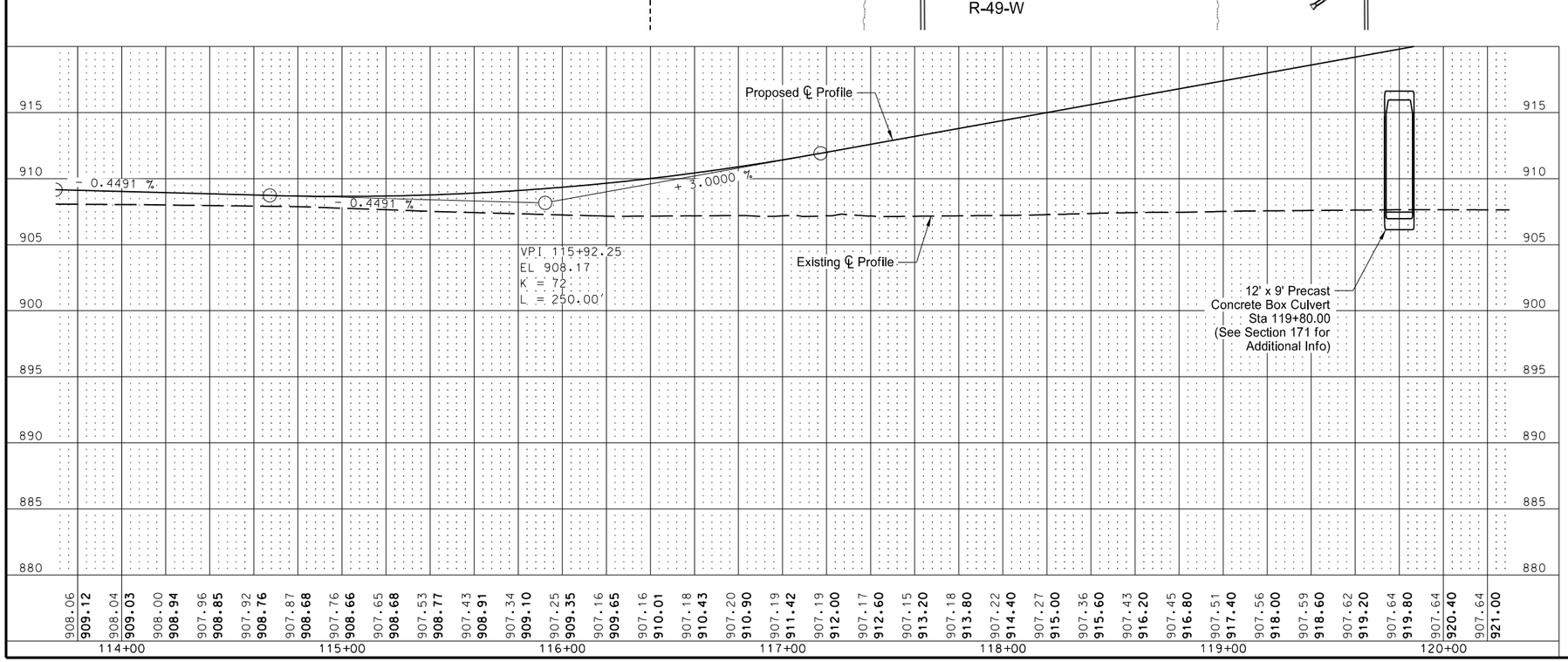
64th Avenue South - 38th St S to 33rd St S

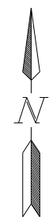
Plan & Profile

64th Avenue South
Sta 108+00 to 114+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	60	3







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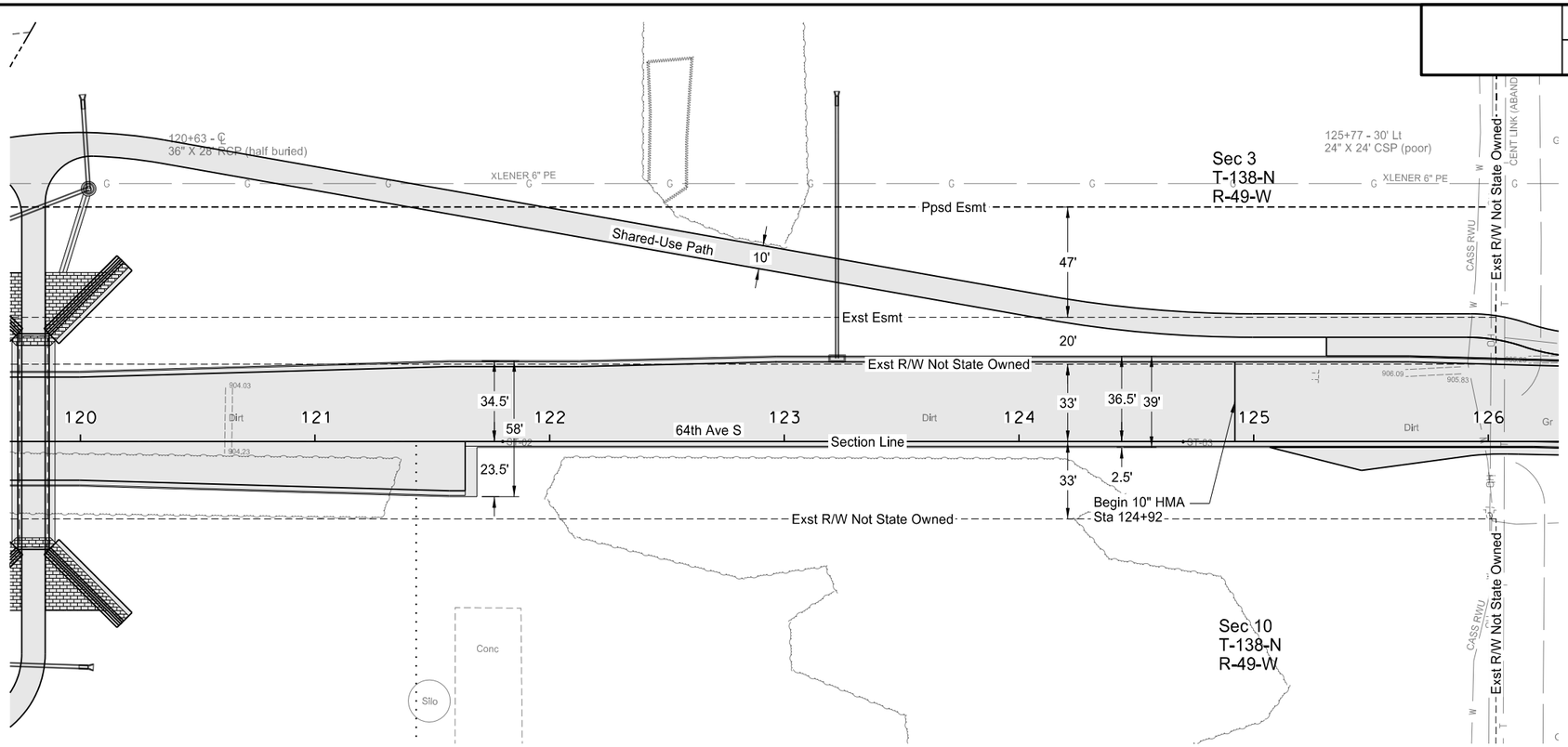
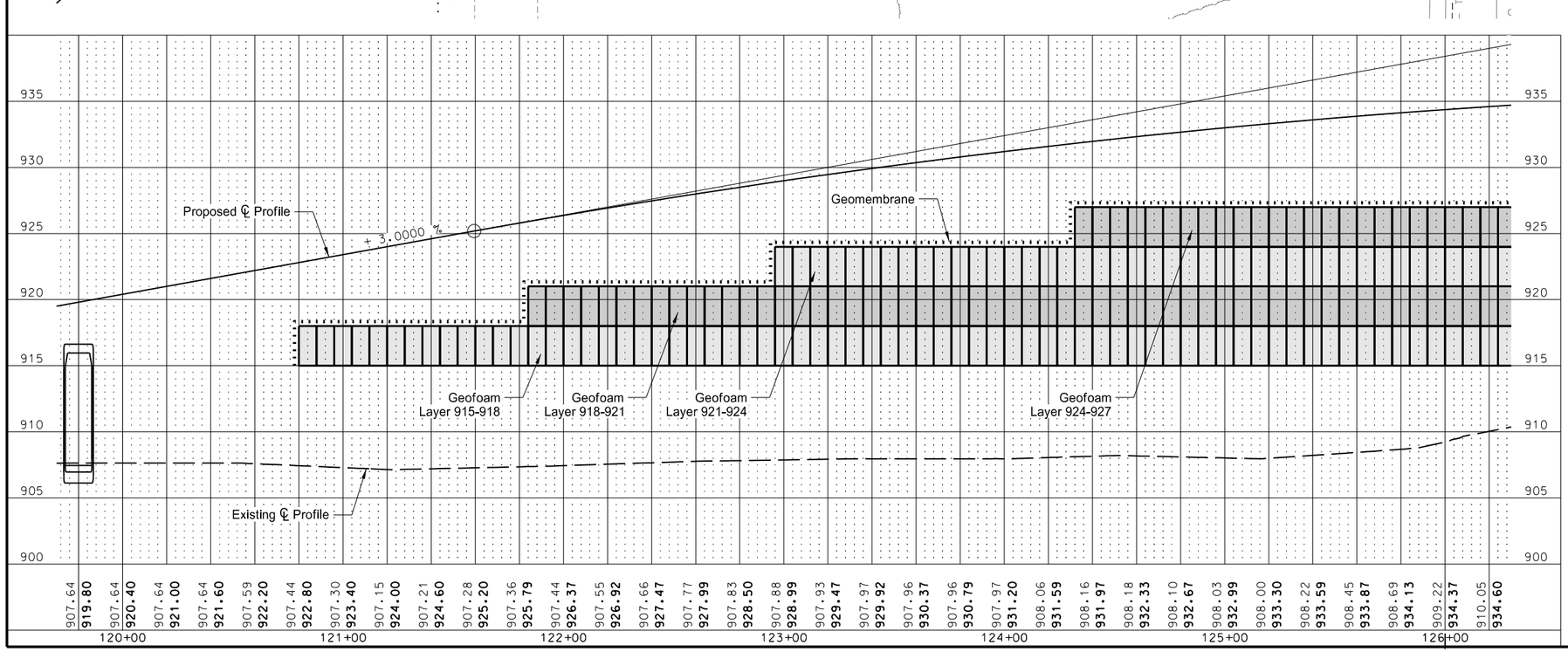
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 114+00 to 120+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	4





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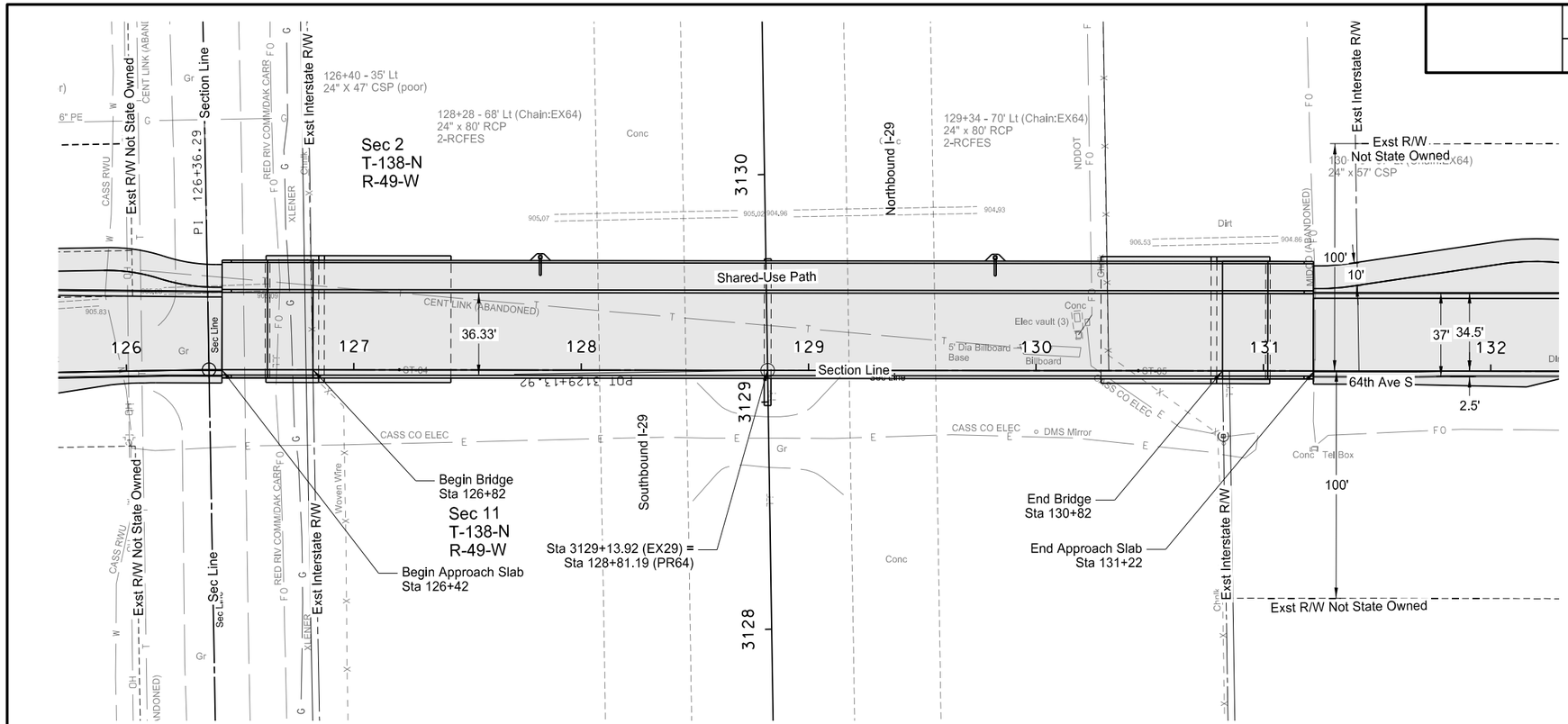
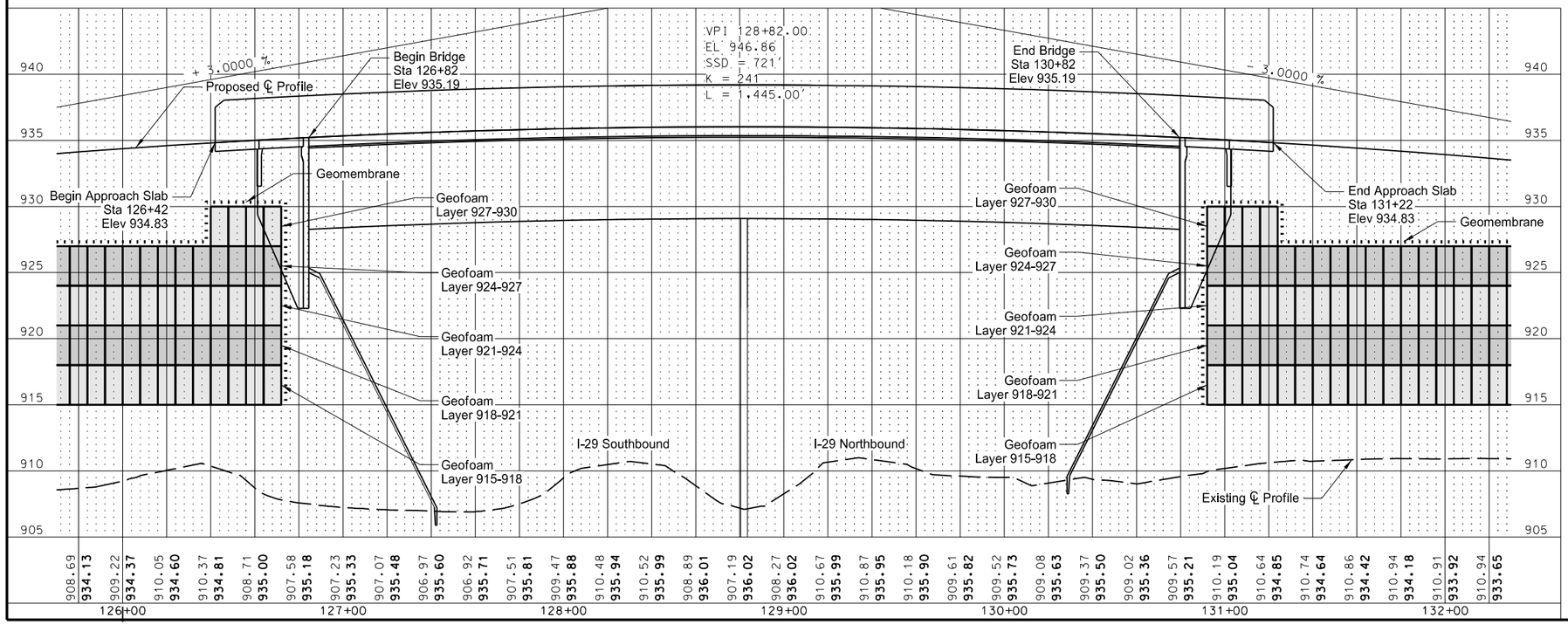
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 120+00 to 126+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	60	5



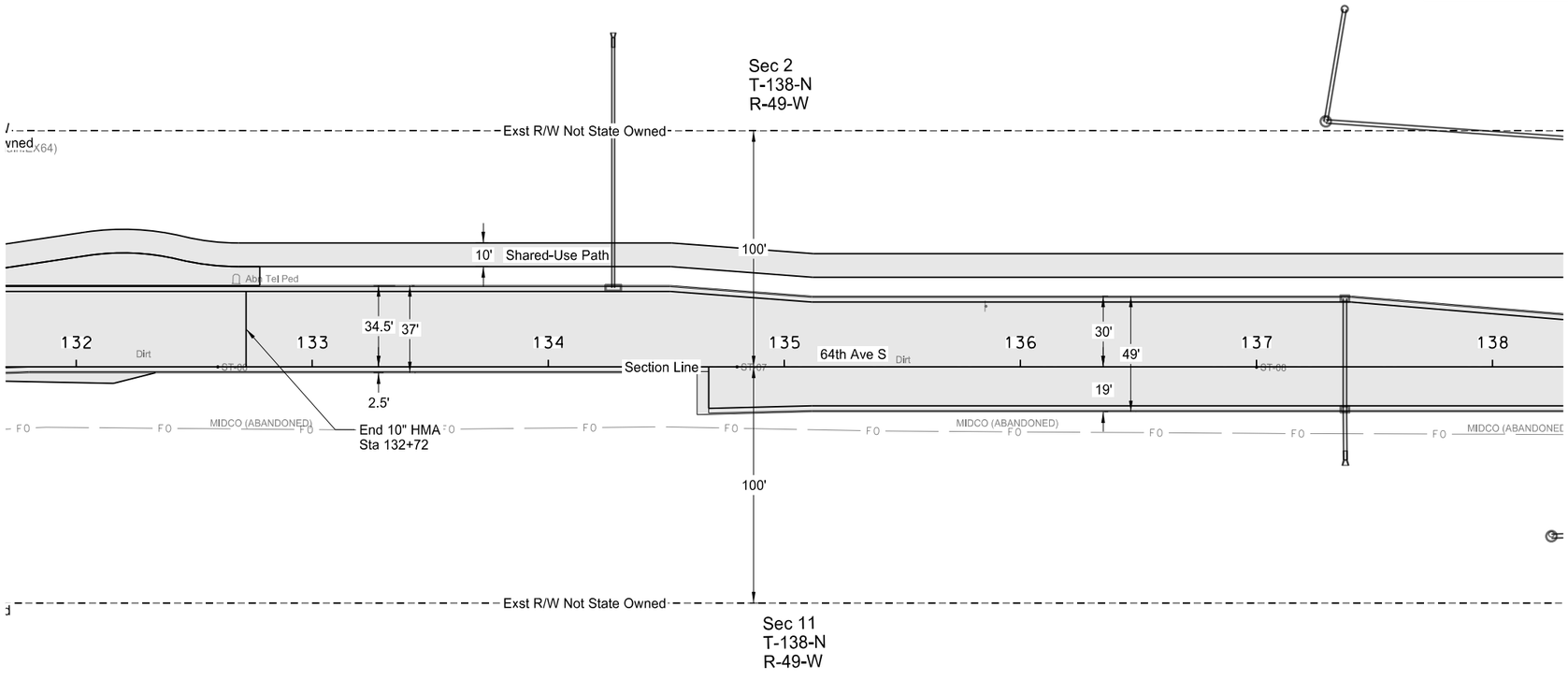


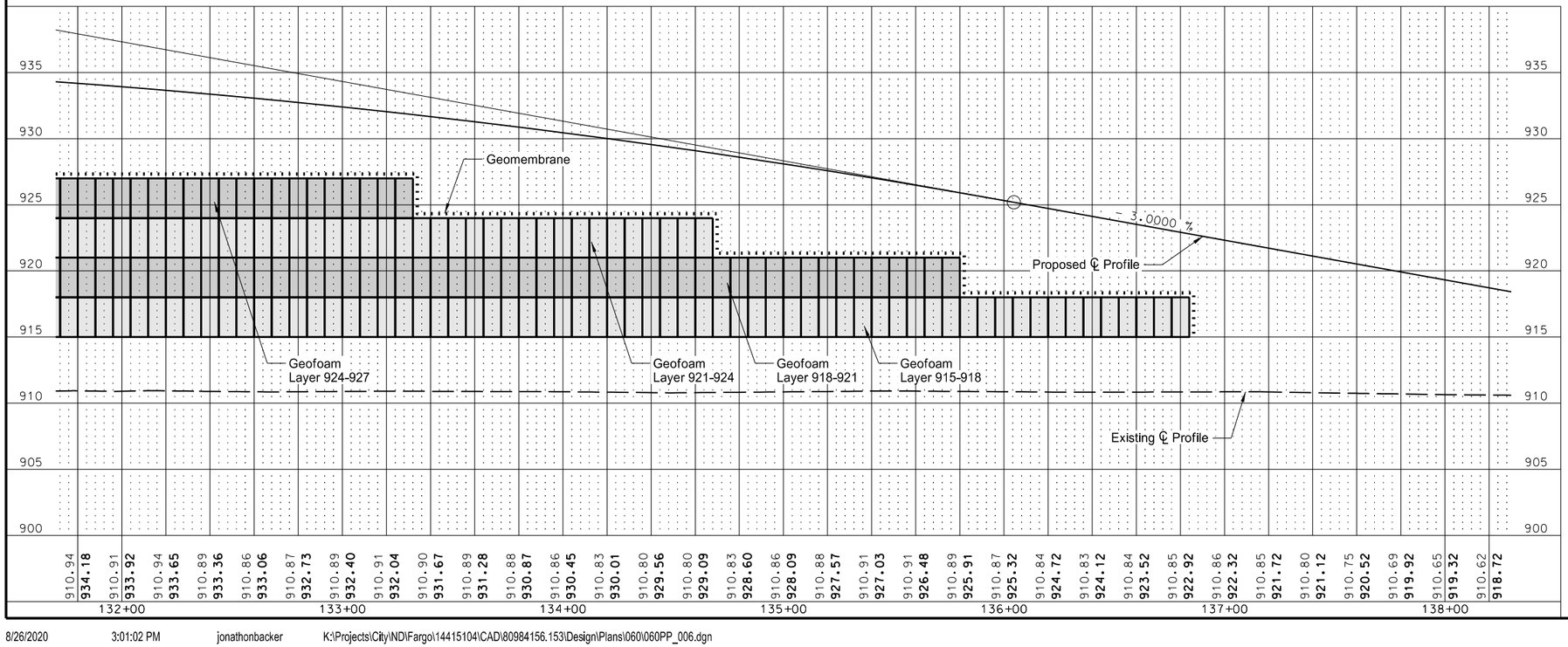
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 126+00 to 132+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	6





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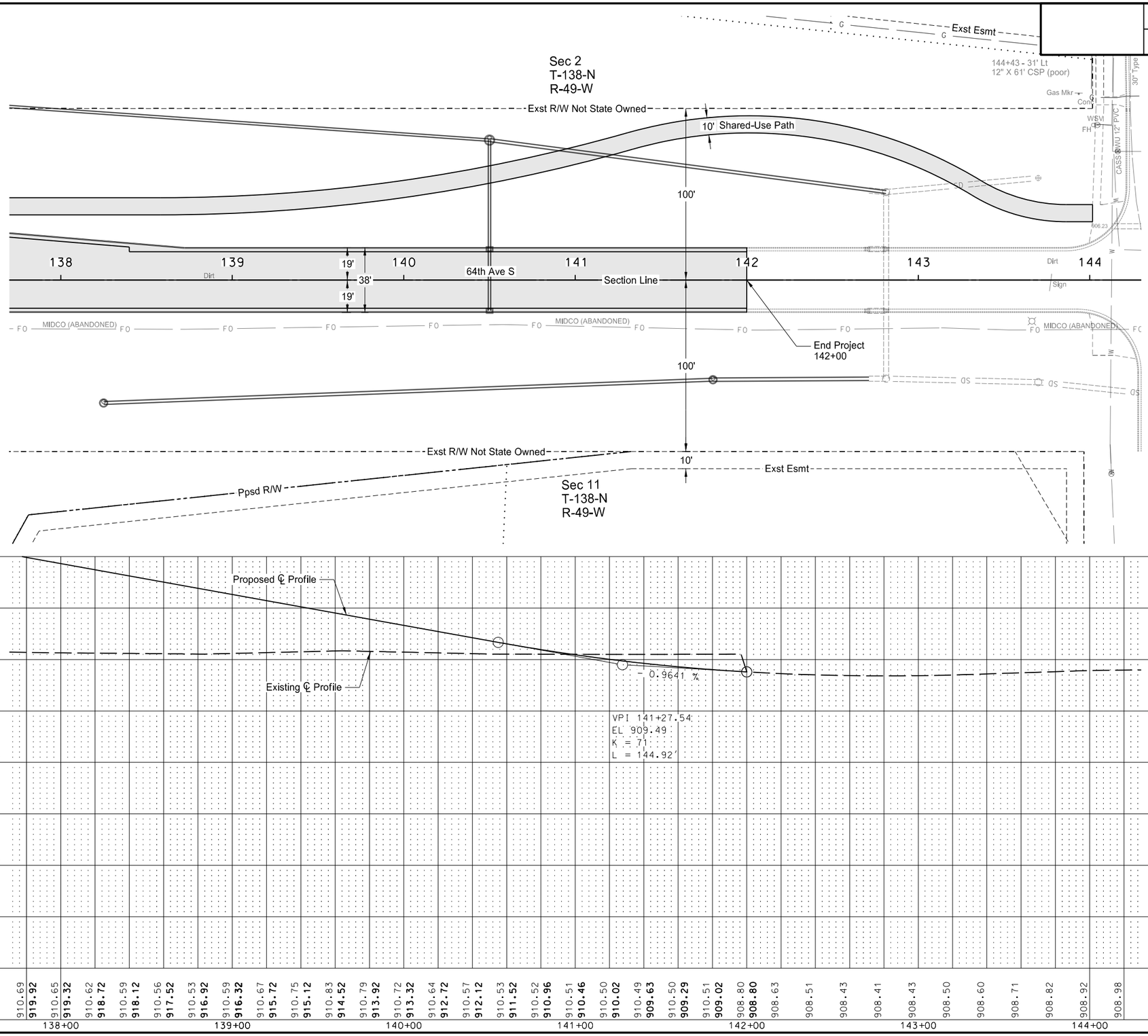
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 132+00 to 138+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	7



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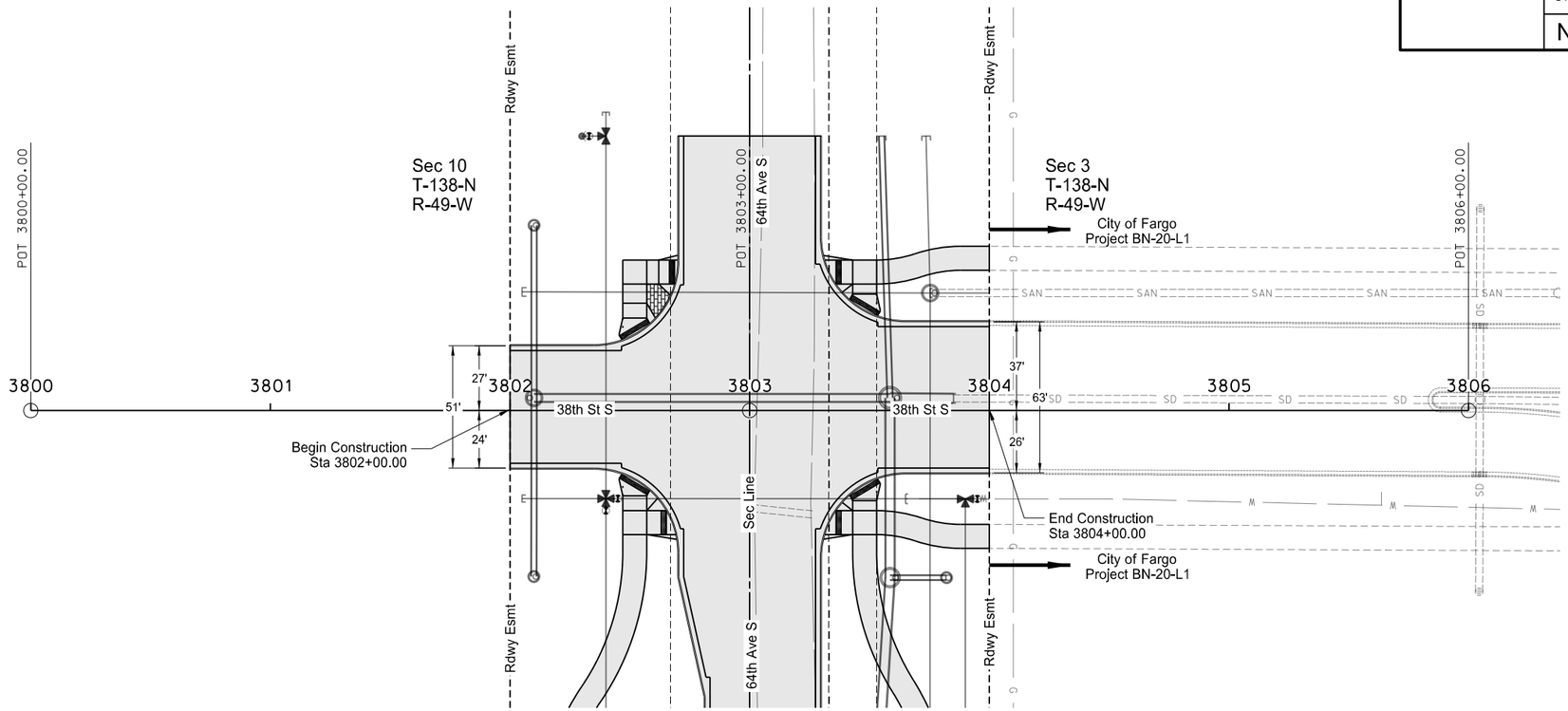
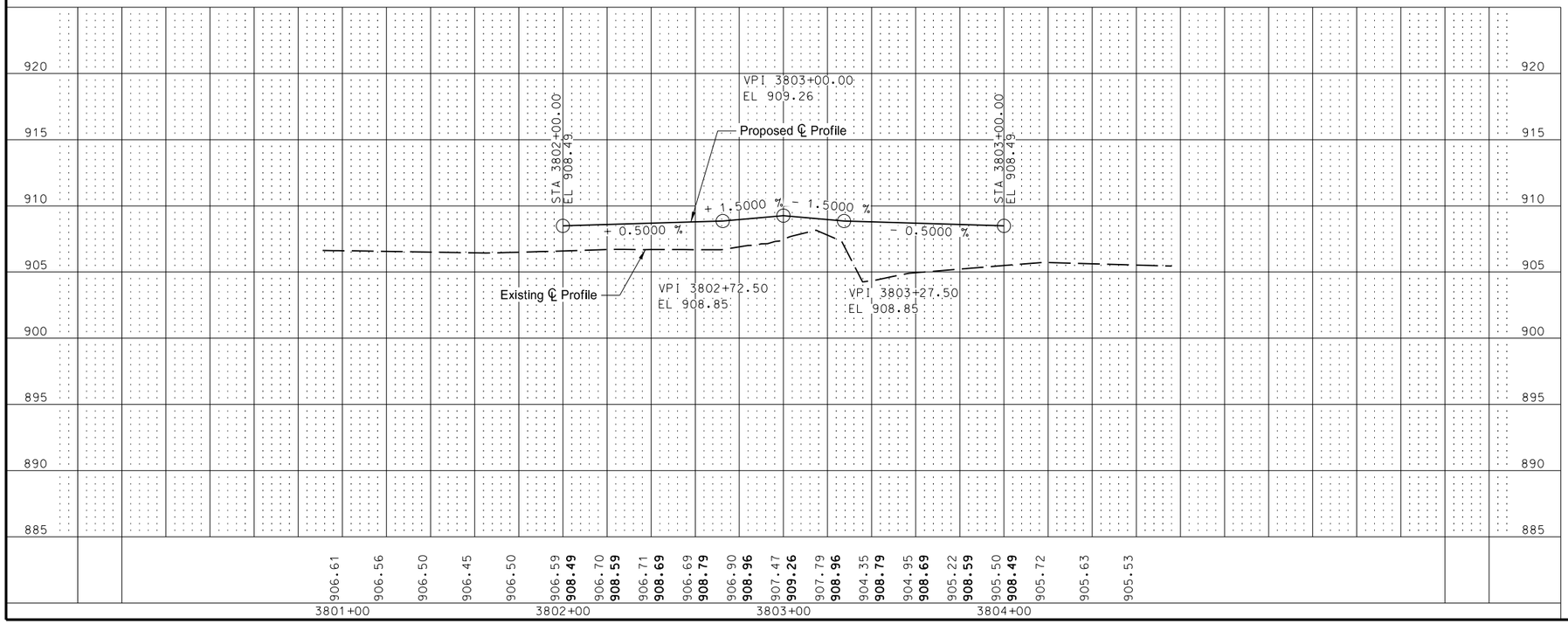
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 138+00 to 144+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	8





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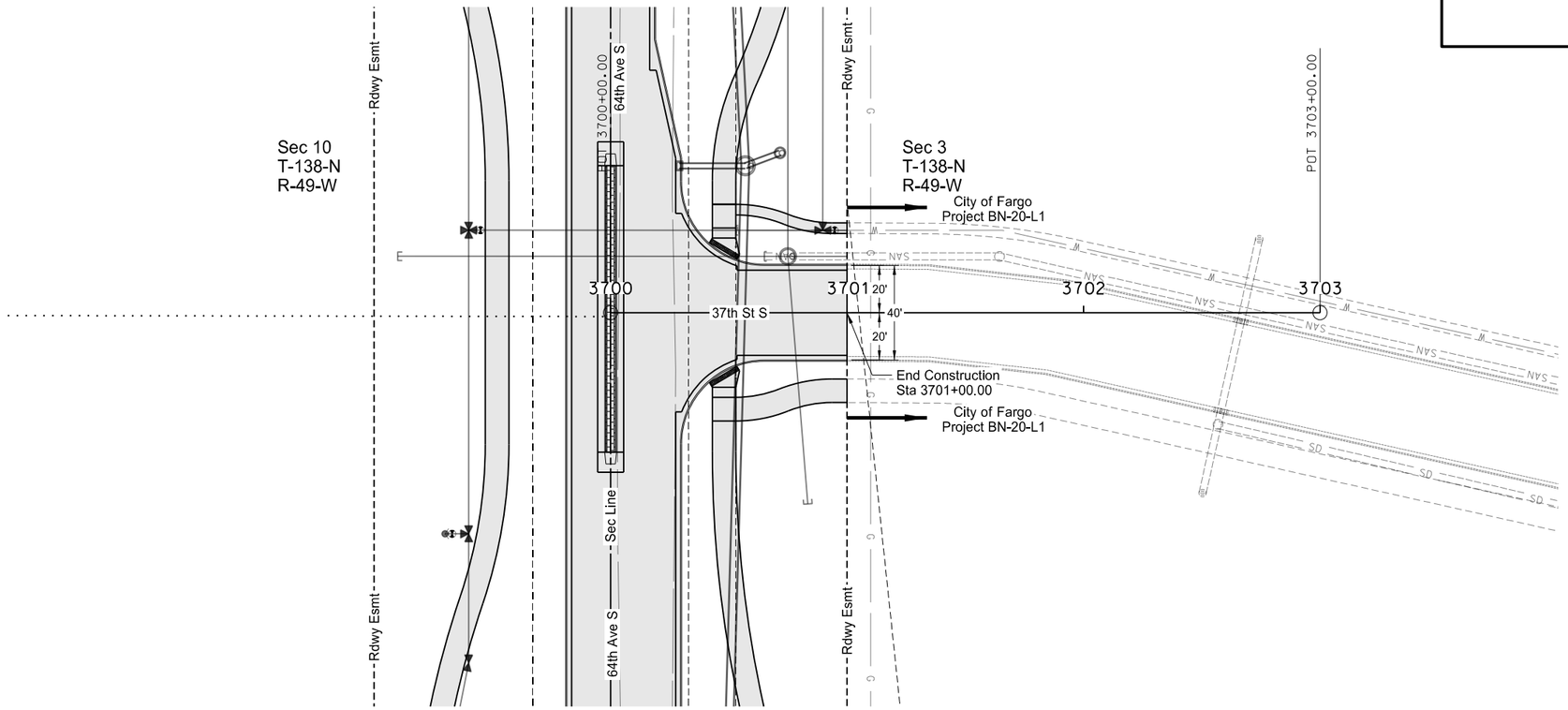
64th Avenue South - 38th St S to 33rd St S

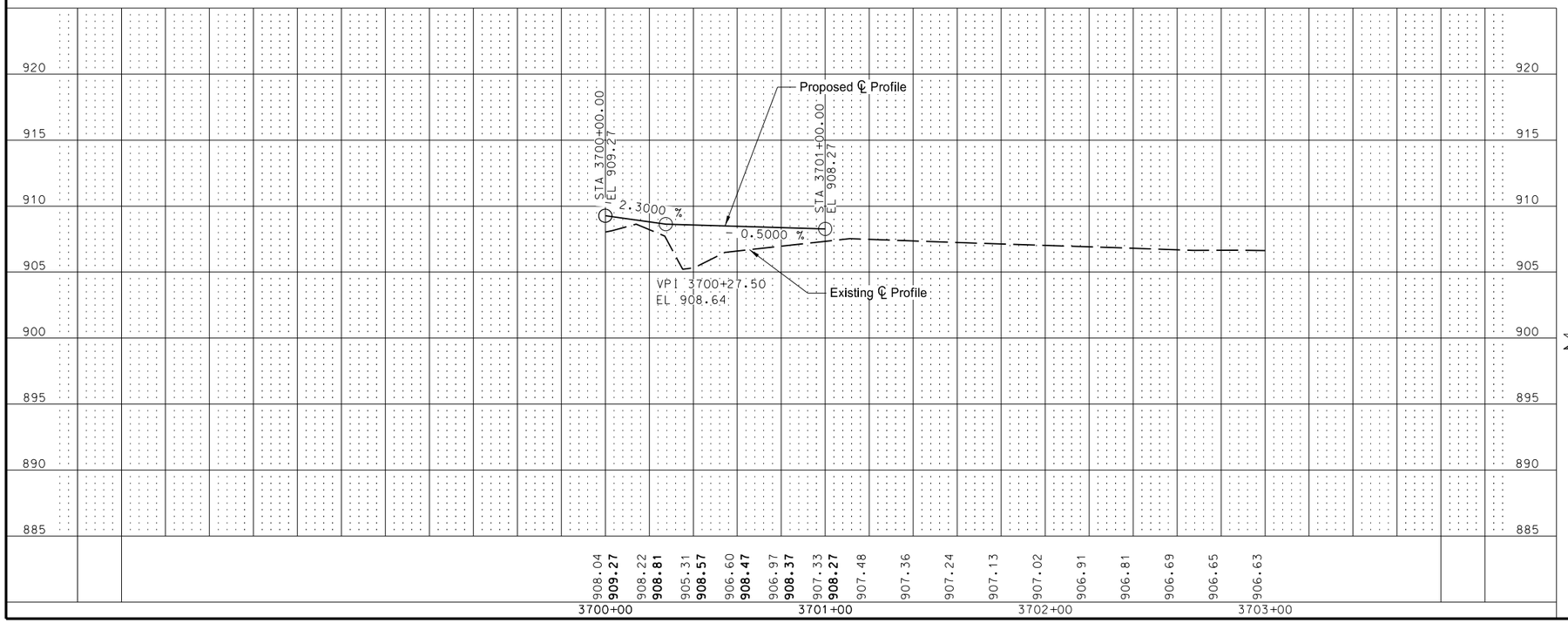
Plan & Profile

38th Street South

8/26/2020 3:01:15 PM jonathonbacker K:\Projects\City\ND\Fargo\14415104\CAD\80984156.153\Design\Plans\060\060PP_008.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	9





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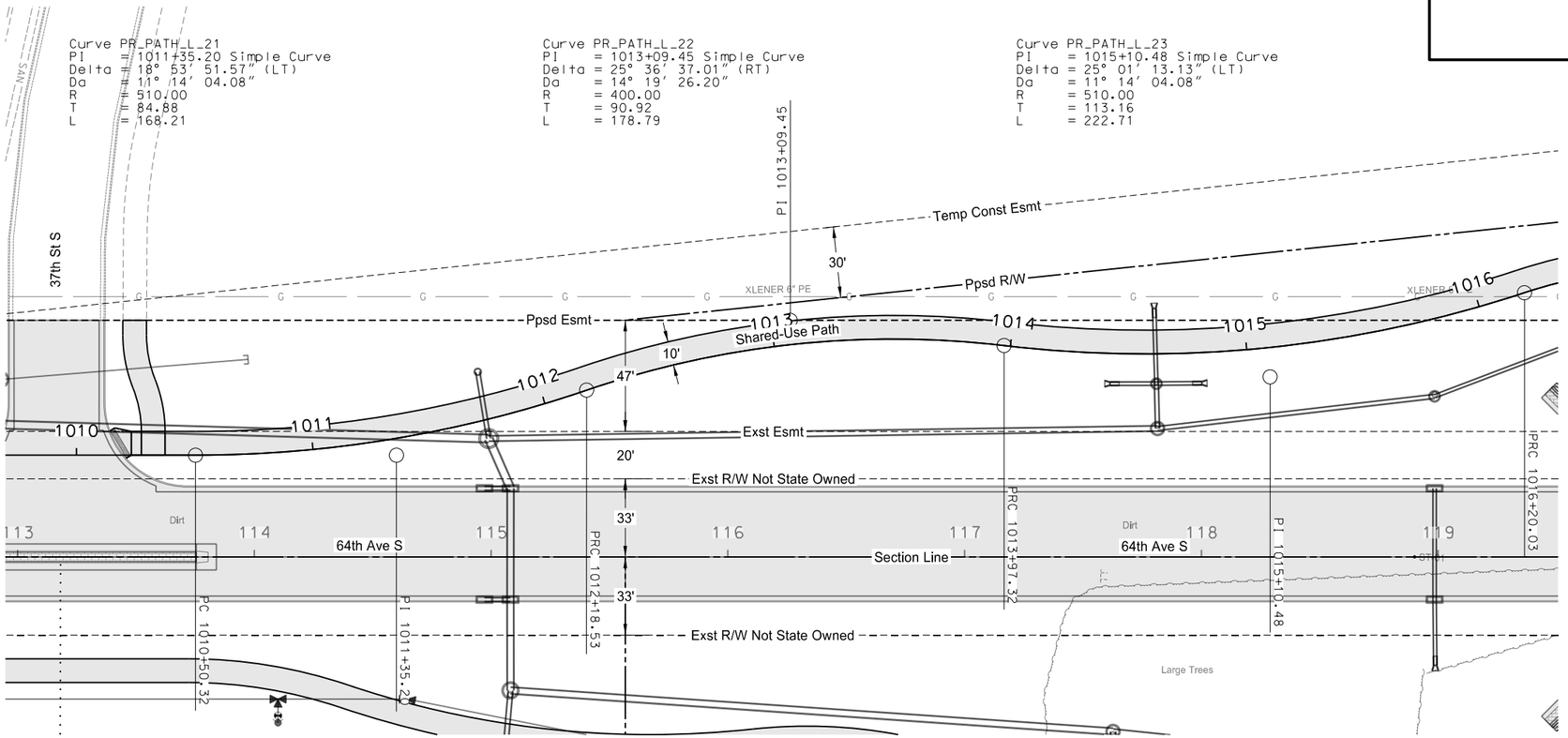
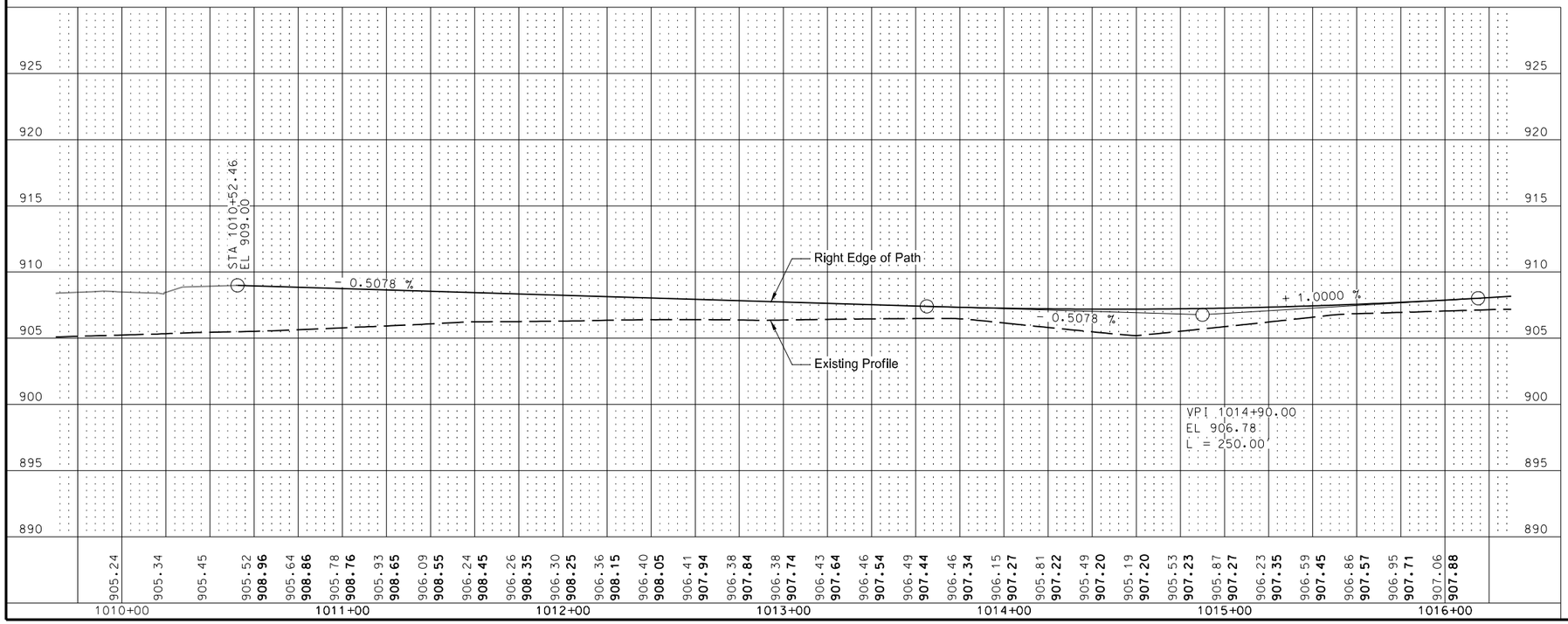
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

37th Street South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	10





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64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 1010+00 to 1016+00 (PR_PATH_L)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	11

Curve PR_PATH_L_24
PI = 1016+70.47 Simple Curve
Delta = 28° 18' 27.65" (RT)
Da = 28° 38' 52.40"
R = 200.00
T = 50.44
L = 98.81

Curve PR_PATH_L_27
PI = 1021+46.22 Simple Curve
Delta = 9° 59' 59.96" (LT)
Da = 11° 14' 04.08"
R = 510.00
T = 44.62
L = 89.01

PI 1016+70.47
Contractor to provide landing at pedestrian underpass turning spaces
Ppsd R/W
+85.00
+35.00
1.5%
1.5%
1016
1017
1018
1019
1020
1021
1022
120+63 - ℄
36" X 23" RCP (half buried)
XLENER
XLENER 6" PE
PC 1021+01.60
PT 1021+90.61
125+
24" X
Ppsd Esmt
Shared-Use Path
10'
47'
Exst Esmt
6:1
20'
PRC 1016+20.03
PT 1017+18.85
Exst R/W Not State Owned
33'
119
120
121
122
123
124
125
64th Ave S
Section Line
Dirt
904.03
904.23
ST-01
ST-02
ST-03
Large Trees
33'
Exst R/W Not State Owned
PI 1021+46.22
Large Trees

935
930
925
920
915
910
905
900
STA 1020+65.00
ELEV 926.70
Right Edge of Path
+ 1.0000 %
+ 5.0000 %
Existing Profile
VPI 1017+10.70
EL 908.98
L = 50.00

906.95 907.71 | 907.06 907.88 | 907.16 908.08 | 907.19 908.28 | 907.08 908.48 | 906.97 908.68 | 906.86 908.96 | 906.78 909.55 | 906.73 910.45 | 906.77 911.45 | 906.82 912.45 | 906.87 913.45 | 906.92 914.45 | 906.95 915.45 | 906.95 916.45 | 906.96 917.45 | 906.97 918.45 | 906.94 919.45 | 906.93 920.45 | 906.77 921.45 | 906.61 922.45 | 906.43 923.45 | 906.39 924.45 | 906.28 925.45 | 906.26 926.45 | 906.31 | 906.29 | 906.19 | 906.09 | 906.03 | 906.06 | 906.10 | 906.19

1016+00 1017+00 1018+00 1019+00 1020+00 1021+00 1022+00

N

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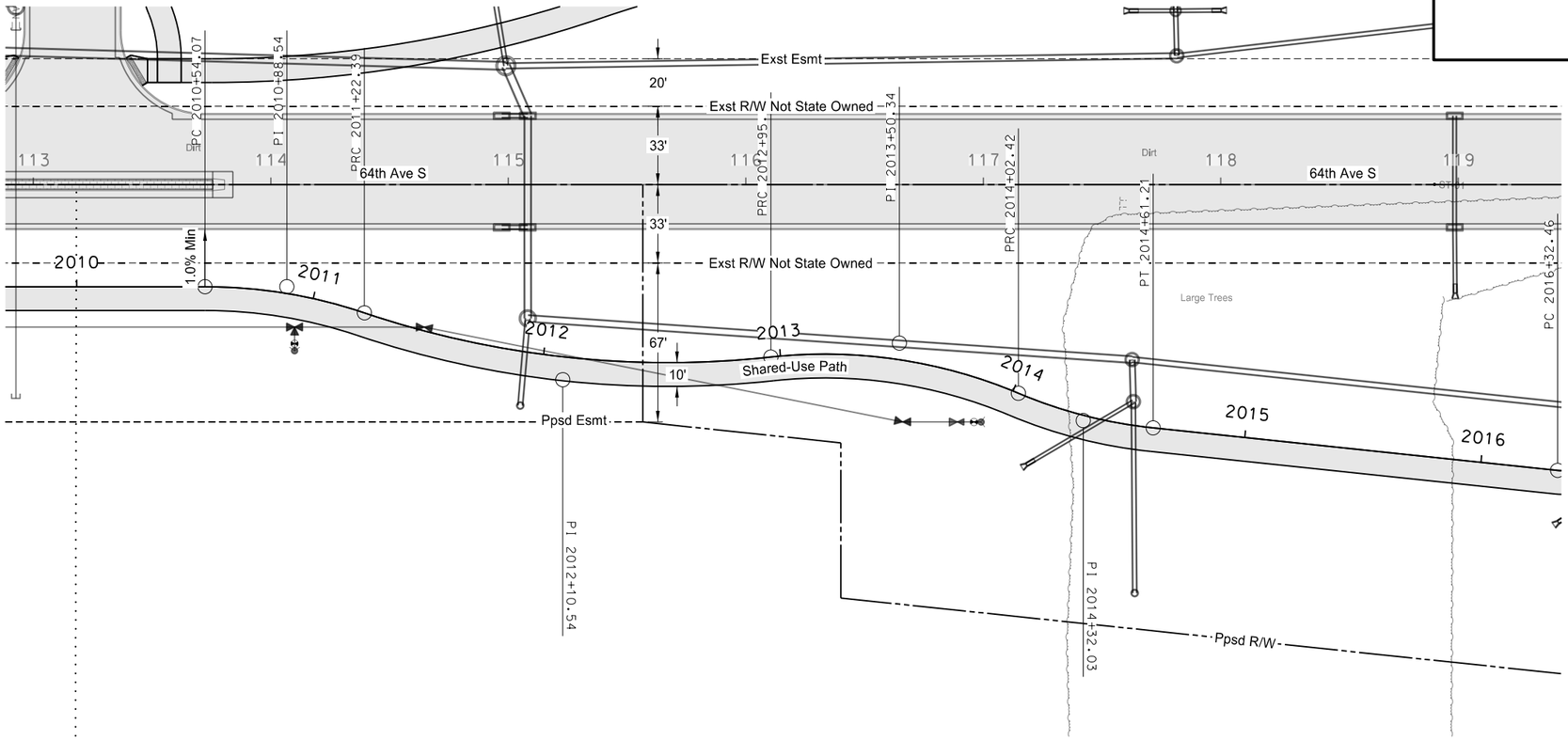
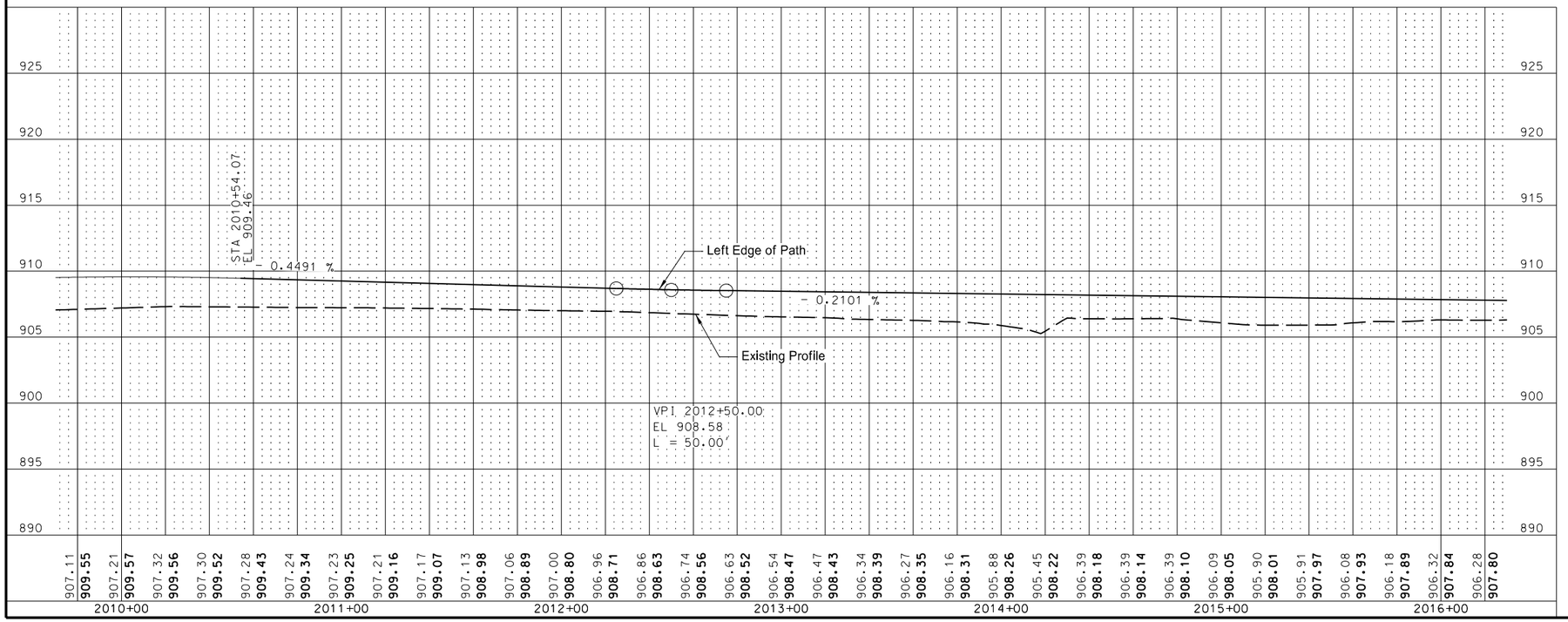
64th Avenue South - 38th St S to 33rd St S

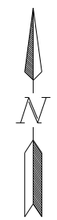
Plan & Profile

64th Avenue South
Sta 1016+00 to 1020+65 (PR_PATH_L)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	60	12







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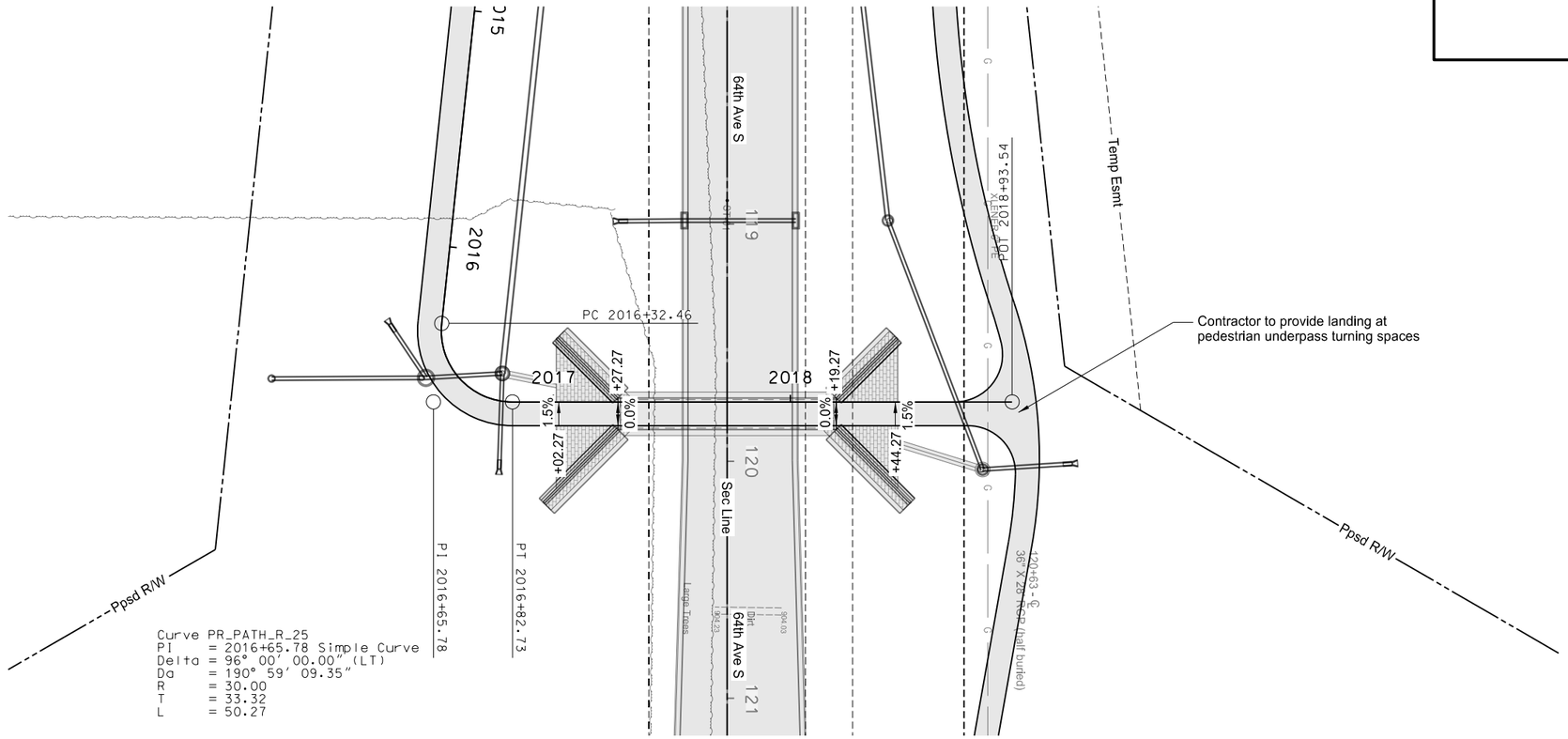
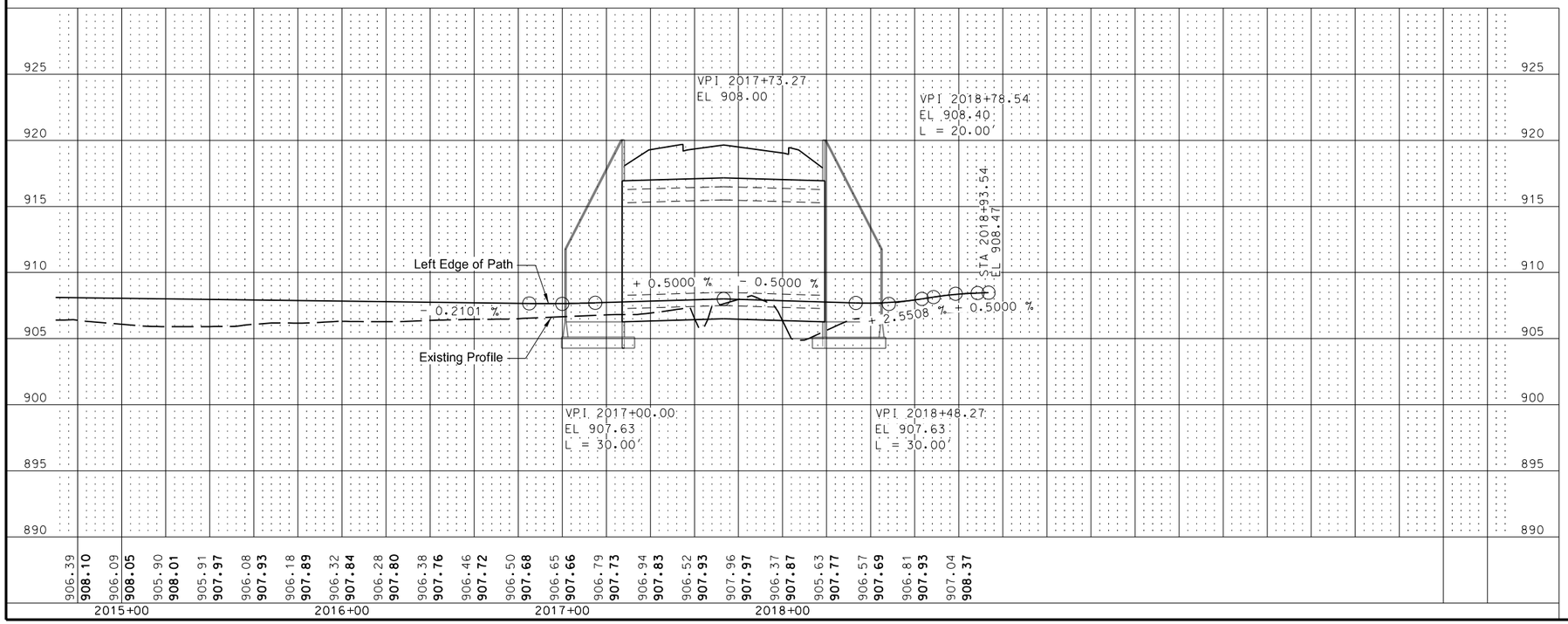
64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 2010+50 to 2016+00 (PR_PATH_R)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	60	13





N

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64th Avenue South - 38th St S to 33rd St S

Plan & Profile

64th Avenue South
Sta 2016+00 to 2018+93.54 (PR_PATH_R)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands	Wetland Impacts Acre(s)			Wetland Mitigation			
								Mitigation Required		USACE/11990 Bank	
					Temp.	Perm. (Fill/Drain)	Perm. (Cut)	EO 11990	USACE	Location	Acre(s)
3b	Sec. 3 T-138-N R-49-W	Ditch	Created	Y	0.01	0.19	-	N	Y	DU ILF	0.38
3c	Sec. 10 T-138-N R-49-W	Ditch	Created	Y	-	0.02	-	N	Y	DU ILF	0.04
4	Sec. 10 T-138-N R-49-W	Ditch	Created	Y	-	0.03	-	N	Y	DU ILF	0.06
5a	Sec. 10 T-138-N R-49-W	Ditch	Created	Y	0.01	0.01	<0.01	N	Y	DU ILF	0.02
5b	Sec. 10 T-138-N R-49-W	Ditch	Created	Y	-	-	-	N	N	-	-
6a	Sec. 2 T-138-N R-49-W	Ditch	Created	Y	0.05	0.14	-	N	Y	Kirkeby/Schuster NDDOT Mitigation Bank	0.14
6b	Sec. 2 T-138-N R-49-W	Ditch	Created	Y	0.01	0.01	-	N	N[2]	-	-
6c	Sec. 2 T-138-N R-49-W	Ditch	Created	Y	0.07	0.02	-	N	Y	Kirkeby/Schuster NDDOT Mitigation Bank	0.02
7	Sec. 11 T-138-N R-49-W	Ditch	Created	Y	-	-	-	N	N	-	-
8	Sec. 11 T-138-N R-49-W	Ditch	Created	Y	-	-	-	N	N	-	-
9	Sec. 11 T-138-N R-49-W	Ditch	Created	Y	0.20	0.11	-	N	Y	Kirkeby/Schuster NDDOT Mitigation Bank	0.11
10	Sec. 2 T-138-N R-49-W	Ditch	Created	Y	0.01	0.02	-	N	Y	DU ILF	0.04
11	Sec. 11 T-138-N R-49-W	Ditch	Created	Y	-	0.07	-	N	Y	DU ILF	0.14
12	Sec. 11 T-138-N R-49-W	Ditch	Created	Y	-	0.02	-	N	Y	DU ILF	0.04
				Totals	0.36	0.64	0.01				0.99

[1] A wetland Jurisdictional Determination was issued by the USACE on 2/19/2019; NWO-2019-00089-BIS.
[2] Median wetland considered previously filled and part of the roadbed footprint.

Impact Summary Table

Permanent Impact Summary		Temporary Impacts and addltional Information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/LF)
Natural/JD (Fill/Drain)	0.00	Temporary JD	0.36
Natural/Non-JD (Fill/Drain)	0.00	Non-JD Temporary	0.00
Created/JD (Fill/Drain)	0.64	Permanent JD > 0.10	0.00
Created /Non-JD (Fill/Drain)	0.00	Permanent OW	0
Total	0.64	Temporary OW	0
JD Natural (Cut)	0.00		
JD Created (Cut)	0.01		
Non-JD Natural (Cut)	0.00		
Non-JD Created (Cut)	0.00		
Total	0.01		

Mitigation Summary Table

	Location	USACE/11990 Bank Acre(s)
USACE Only	DU ILF	0.72
USACE Only	Kirkeby/Schuster NDDOT Mitigation Bank	0.27
	Total	0.99

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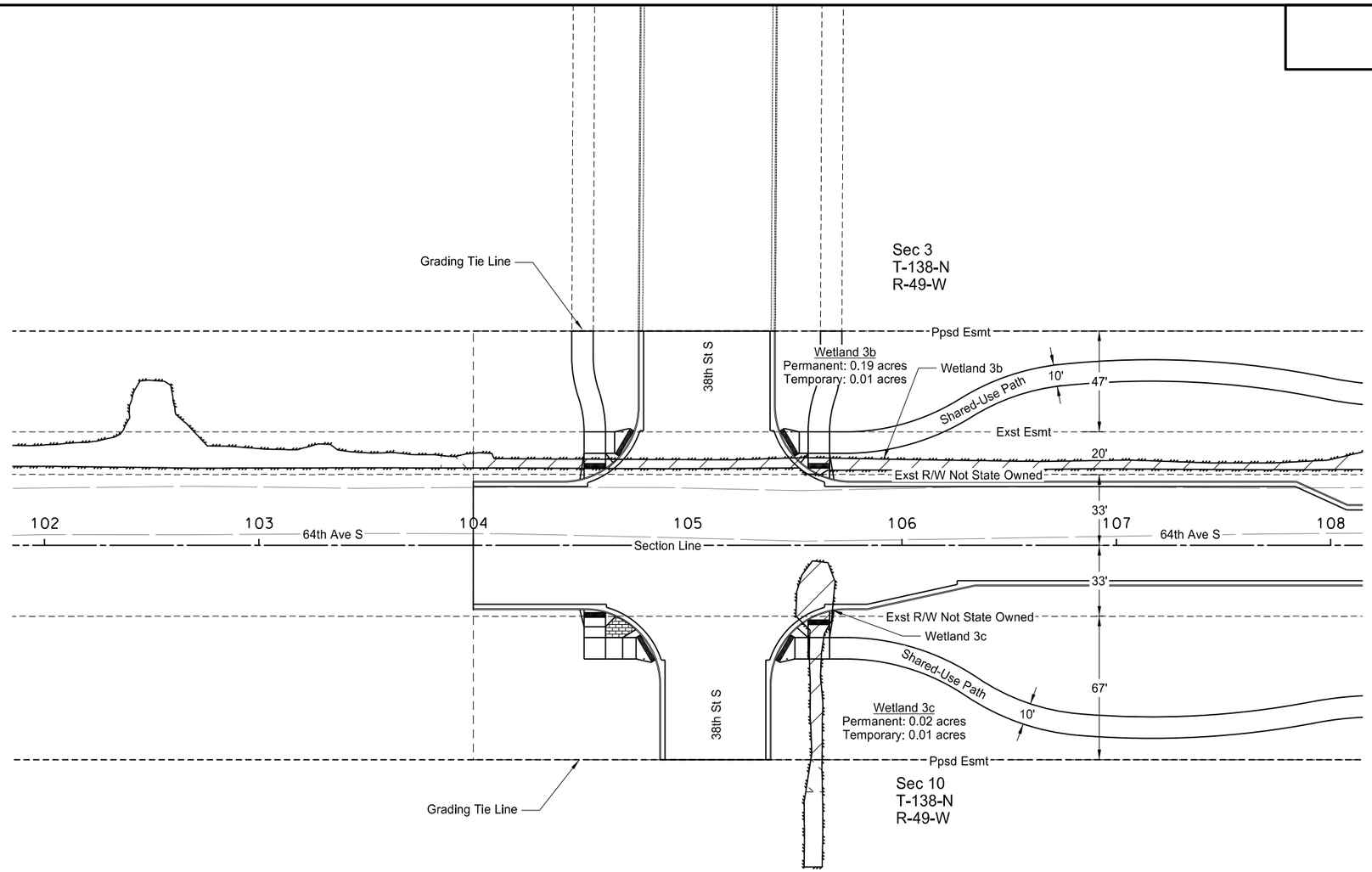
64th Avenue South - 38th St S to 33rd St S

Wetlands, Mitigation, and Environmental
Wetland Impact Table

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	2



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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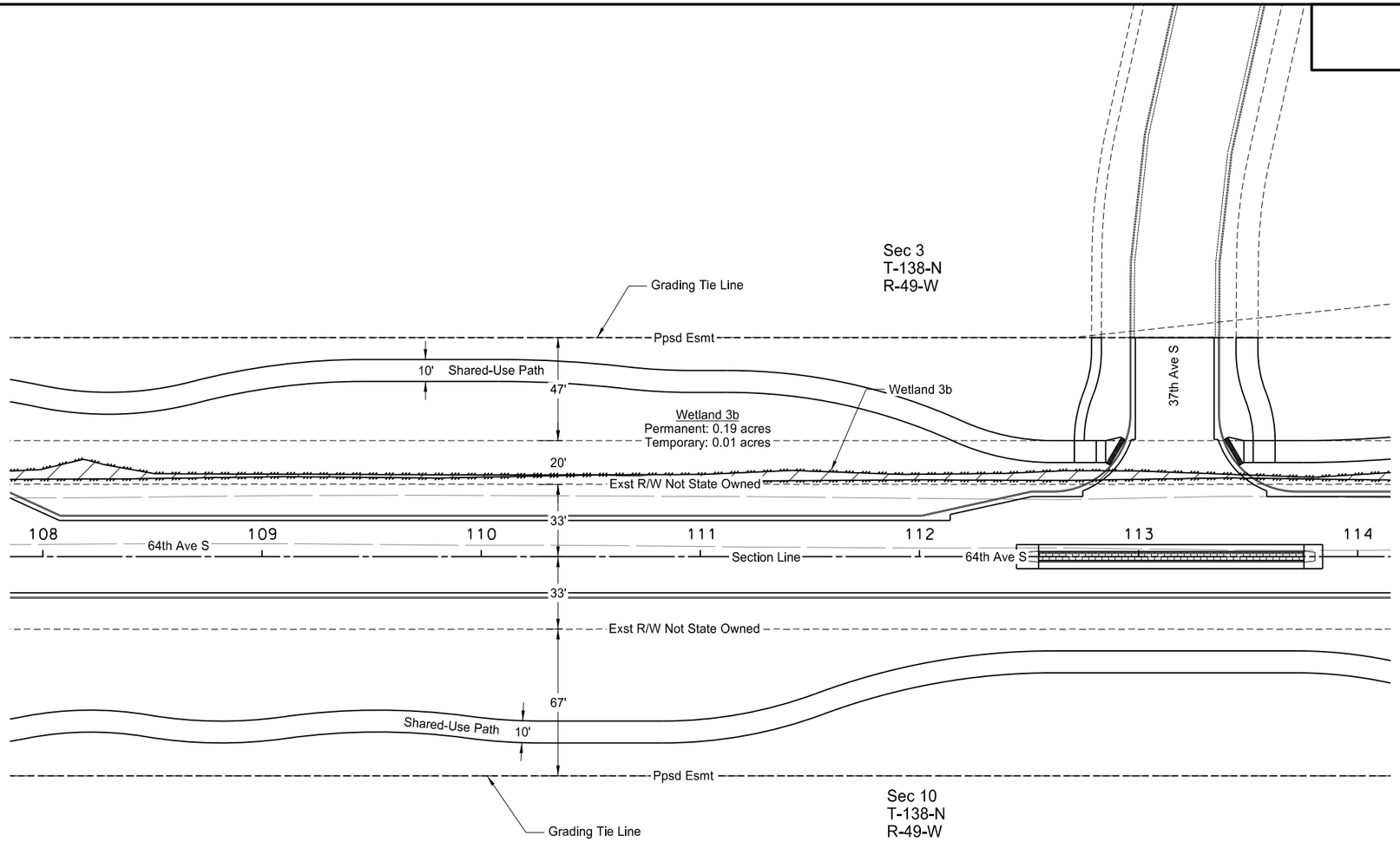
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 104+00 to 108+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	3



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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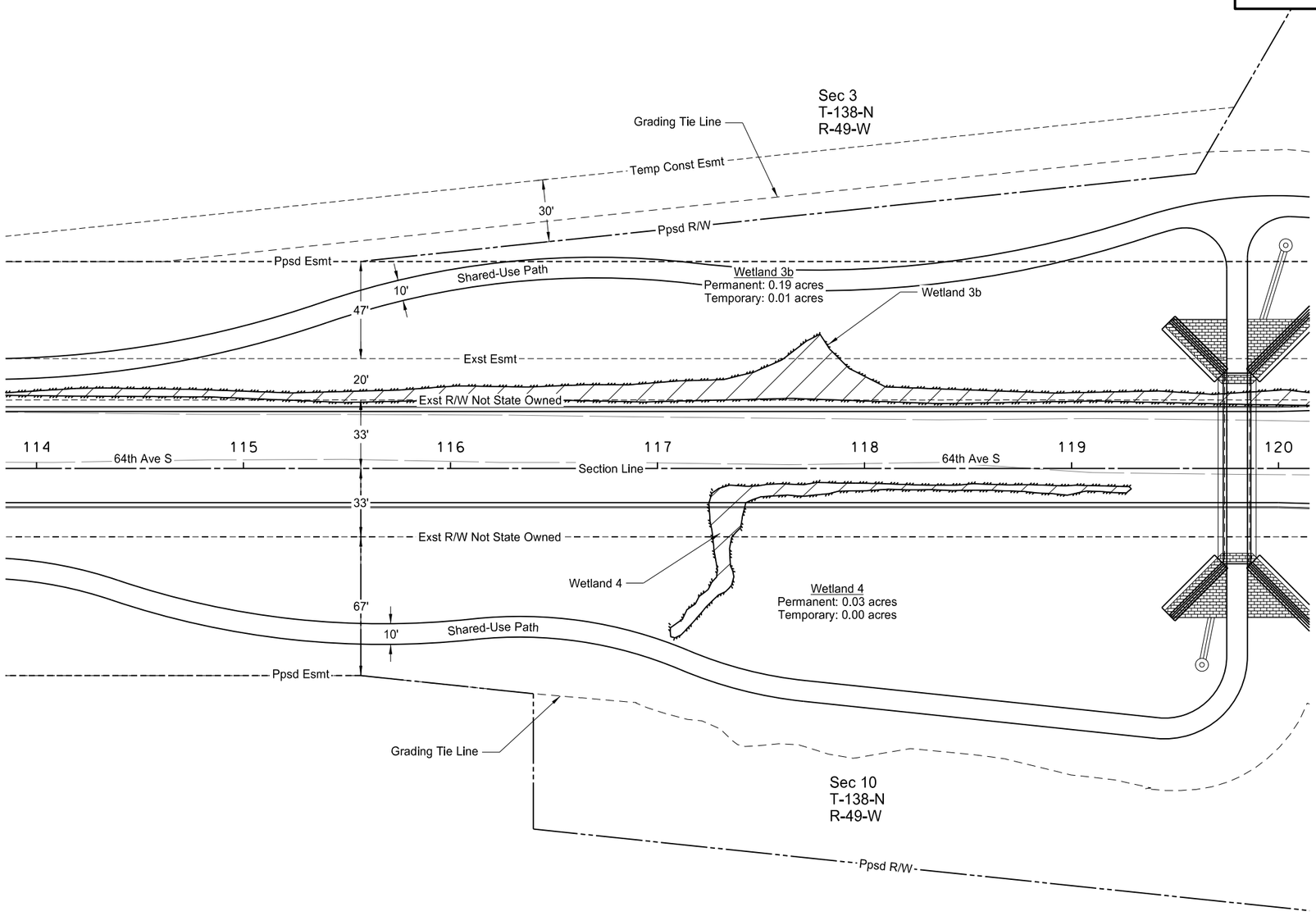
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 108+00 to 114+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	4



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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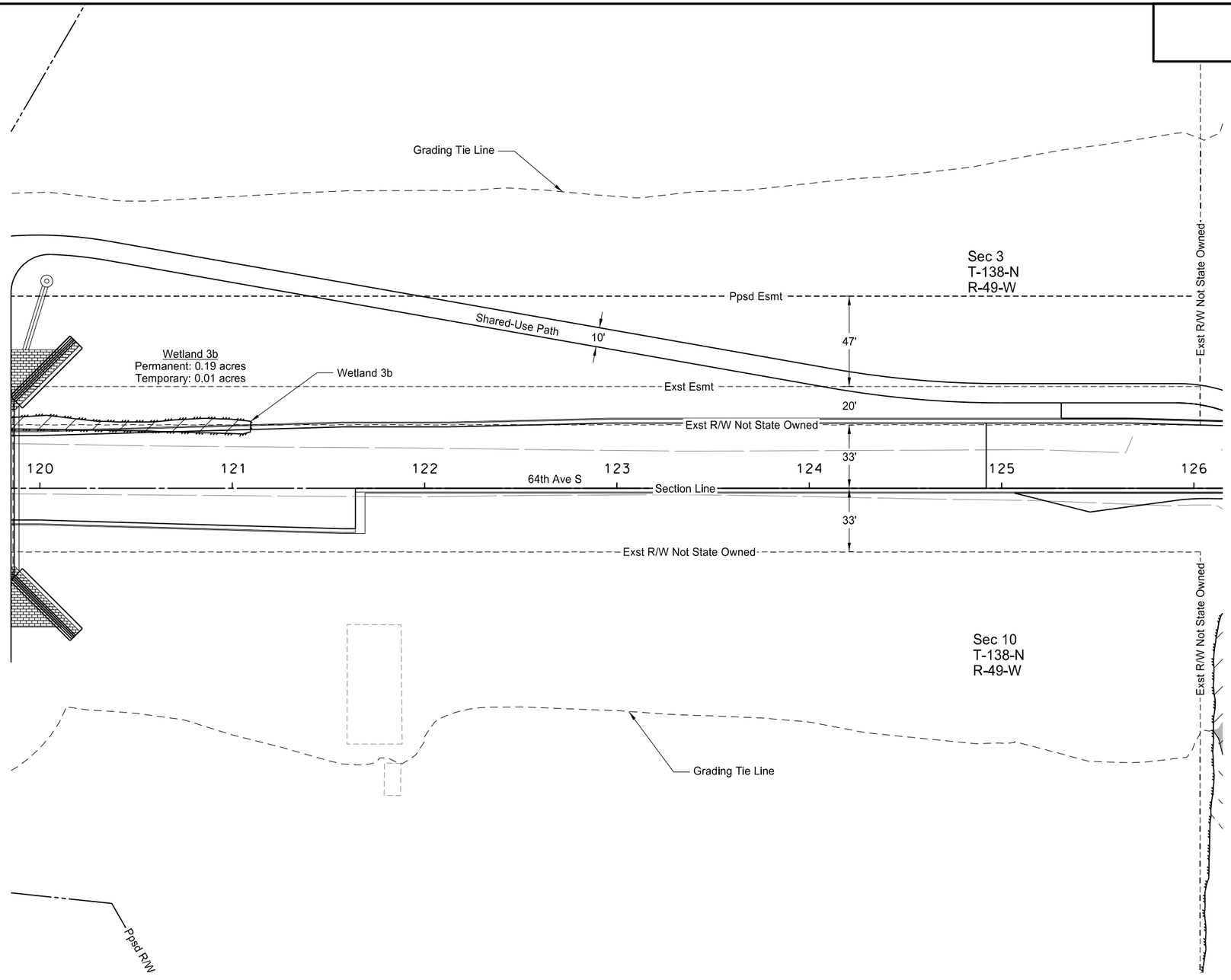
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 114+00 to 120+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	5



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 120+00 to 126+00 (PR64)

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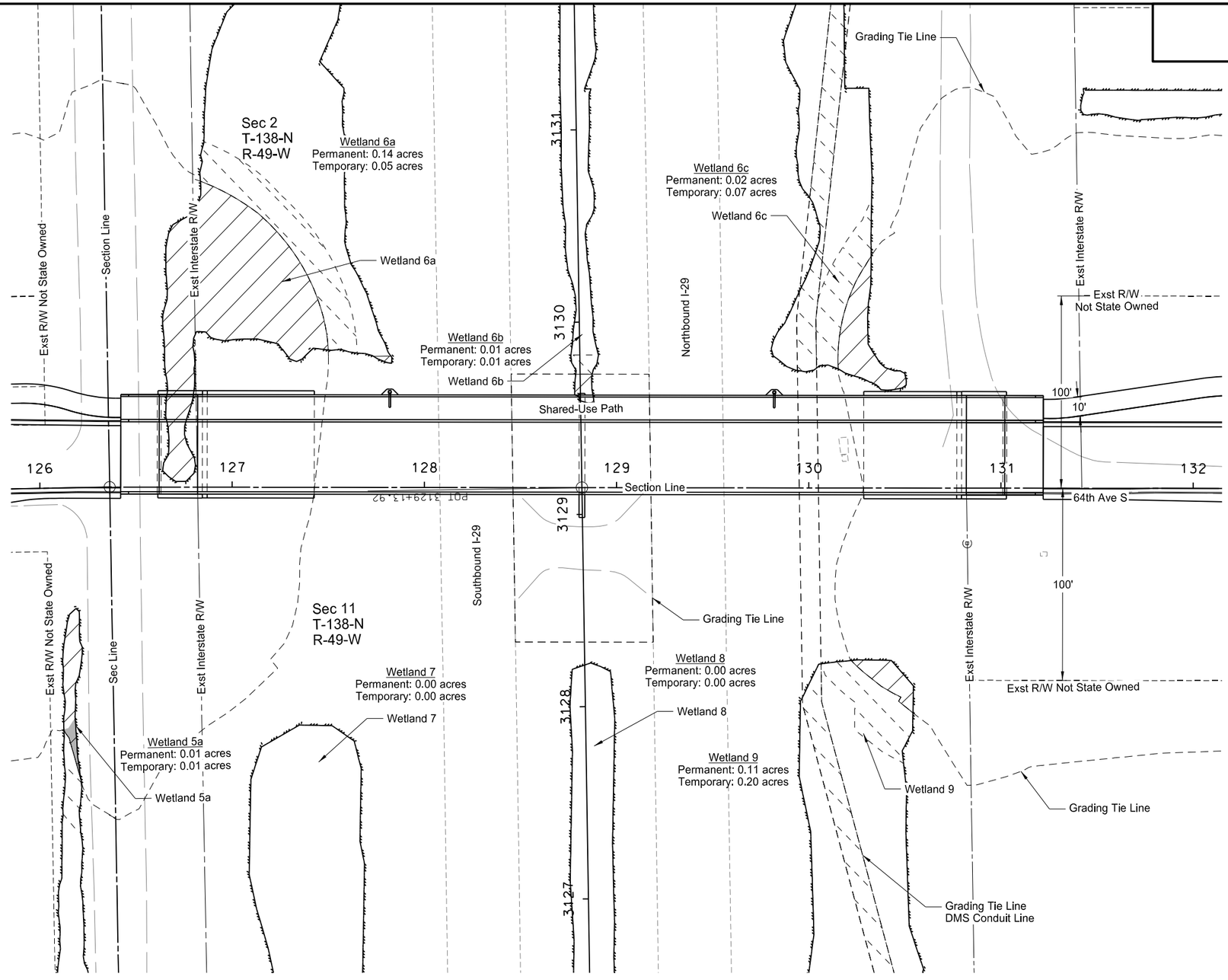
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	75	6



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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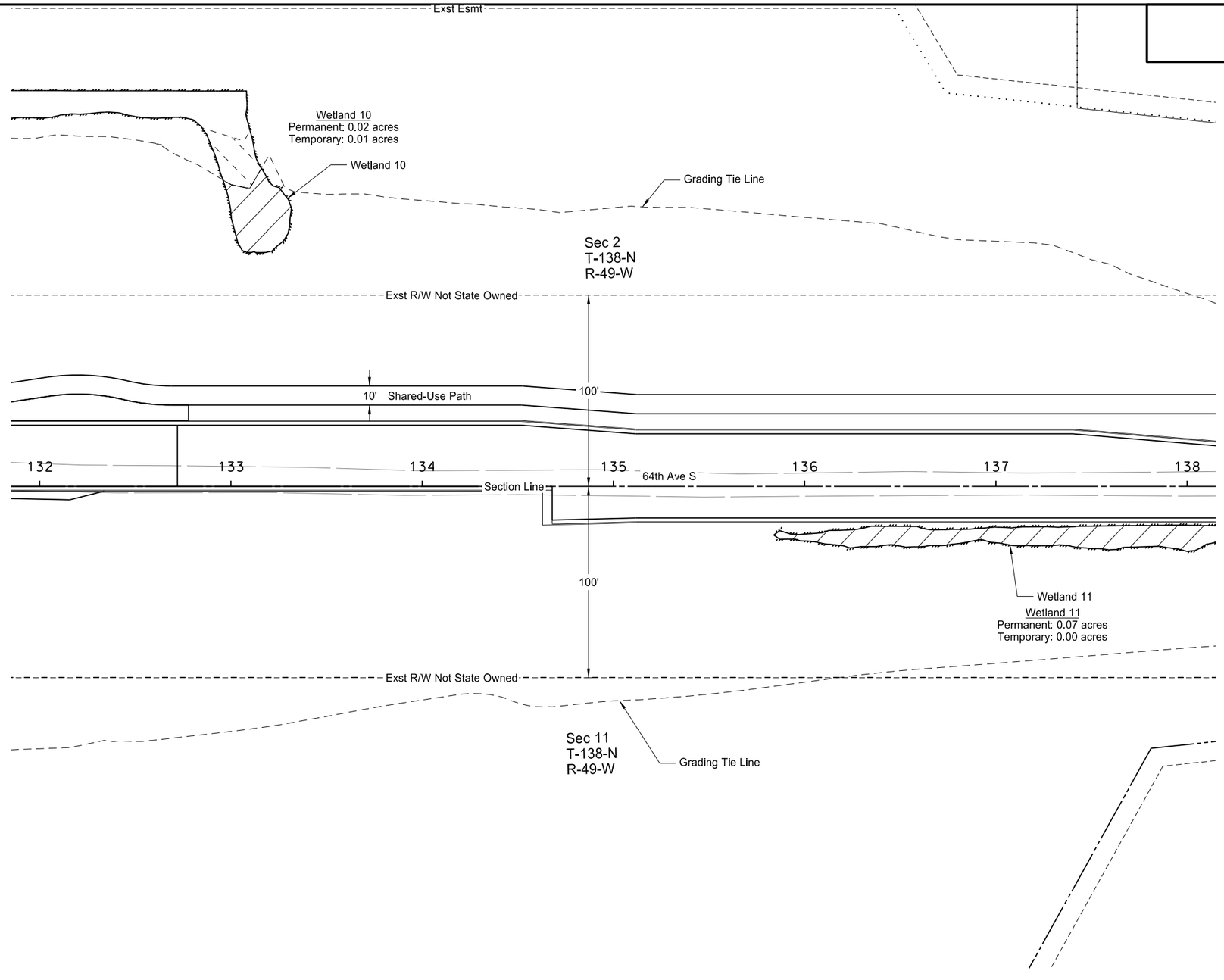
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 126+00 to 132+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	7



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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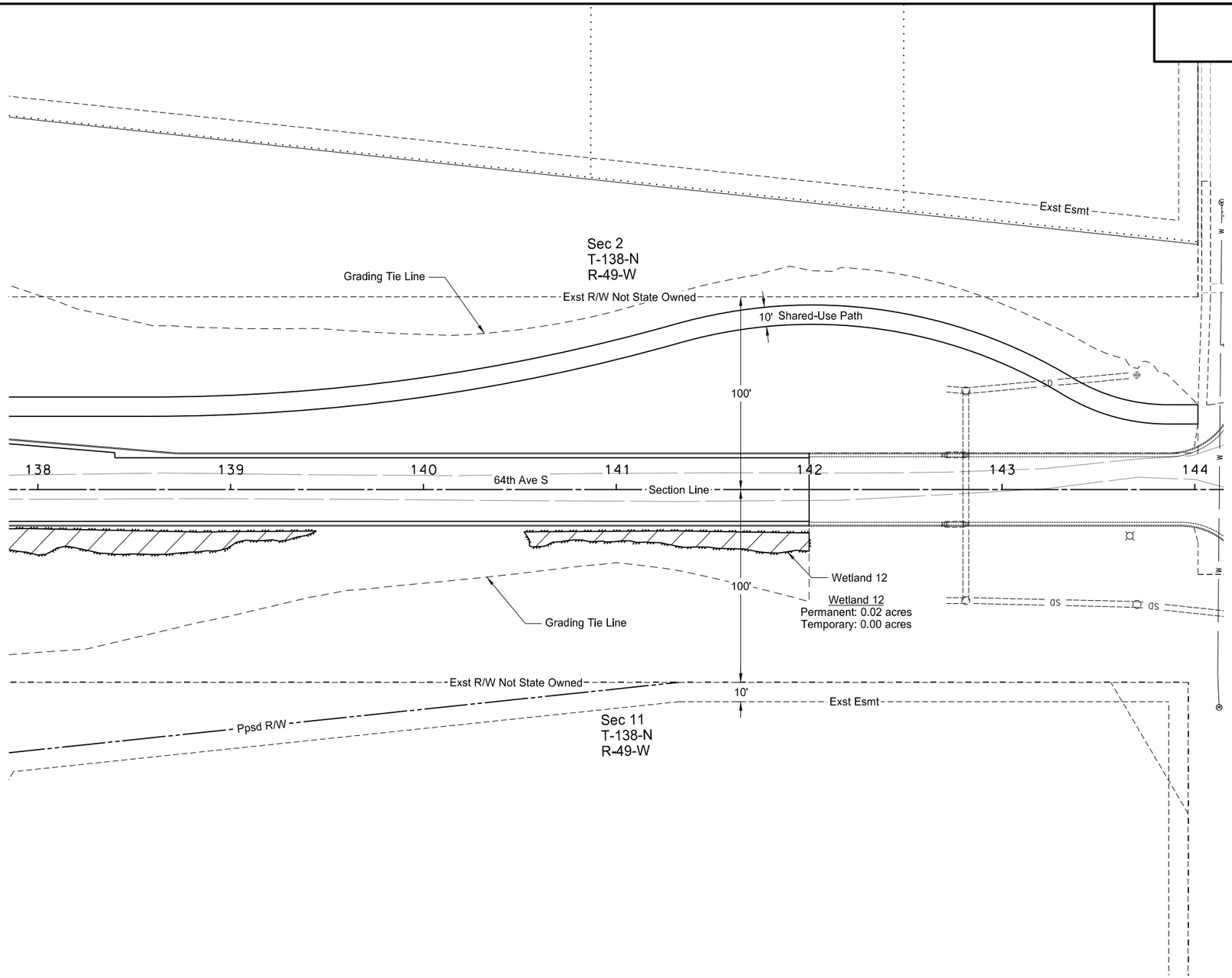
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 132+00 to 138+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	8



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

N

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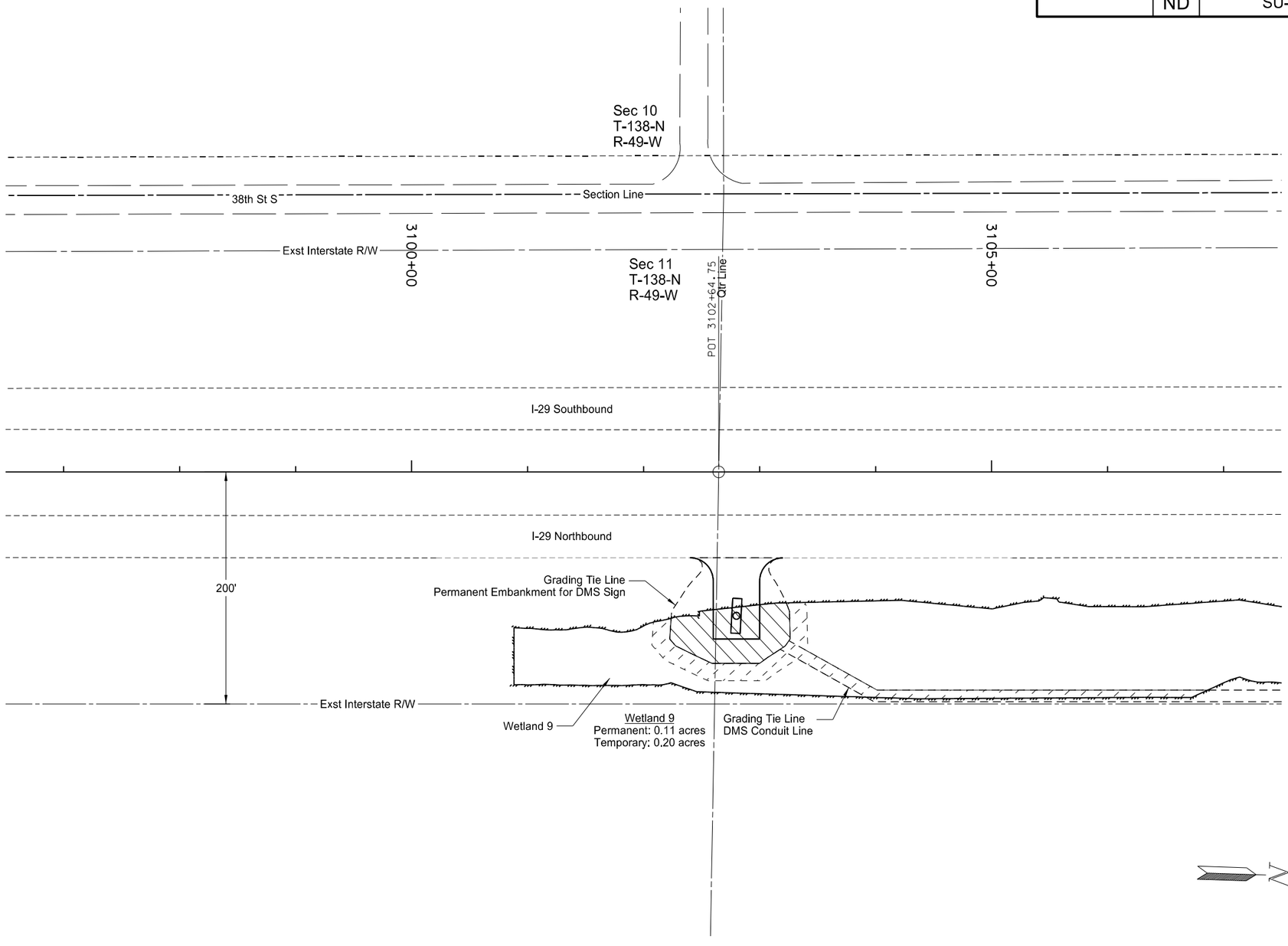
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

64th Avenue South
Sta 138+00 to 144+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	75	9



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

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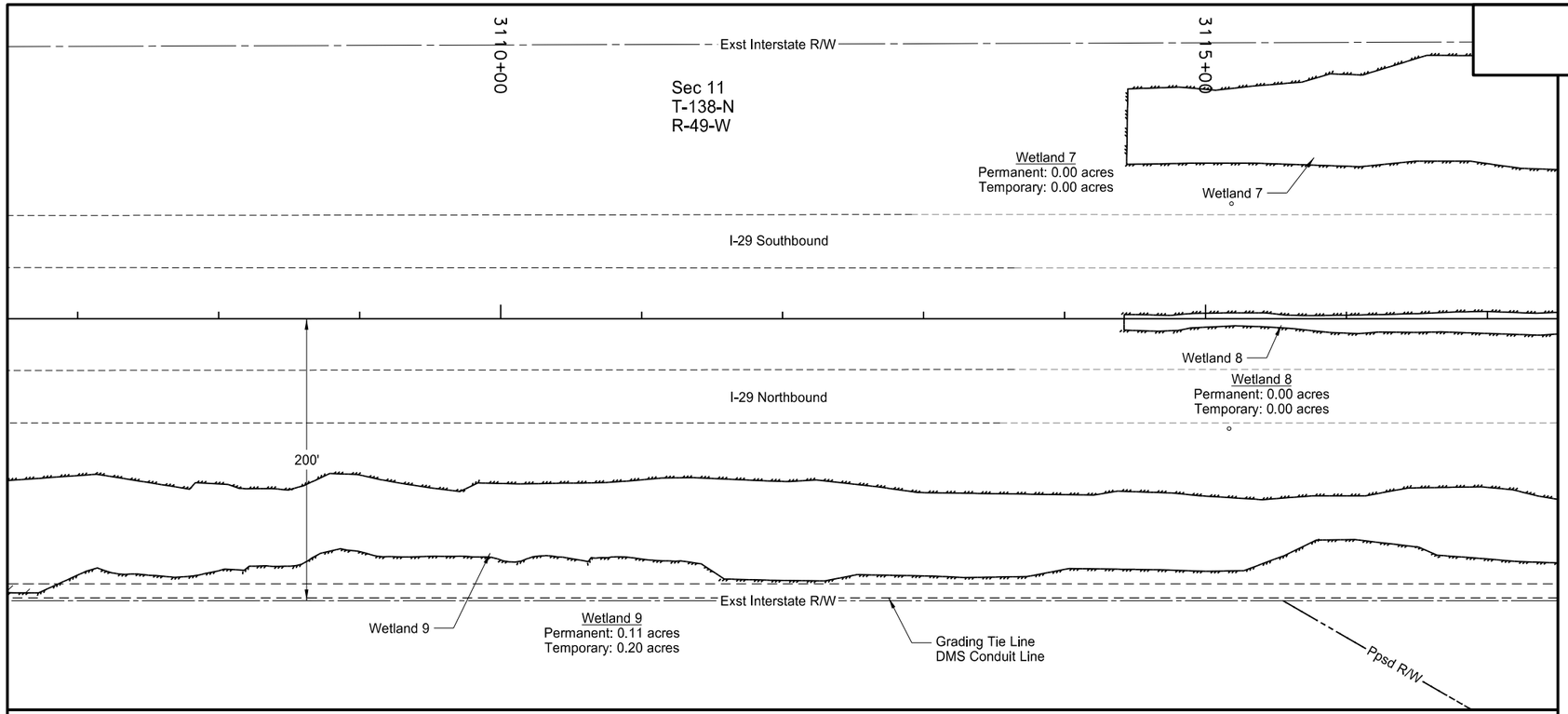
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

Interstate 29
Sta 3097+00 to 3107+00 (EX29)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	75	10



LEGEND

- Wetland Impact Permanent (Cut)
- Wetland Impact Permanent (Fill)
- Wetland Impact Temporary
- Grading Tie Line
- Existing Delineated Wetland

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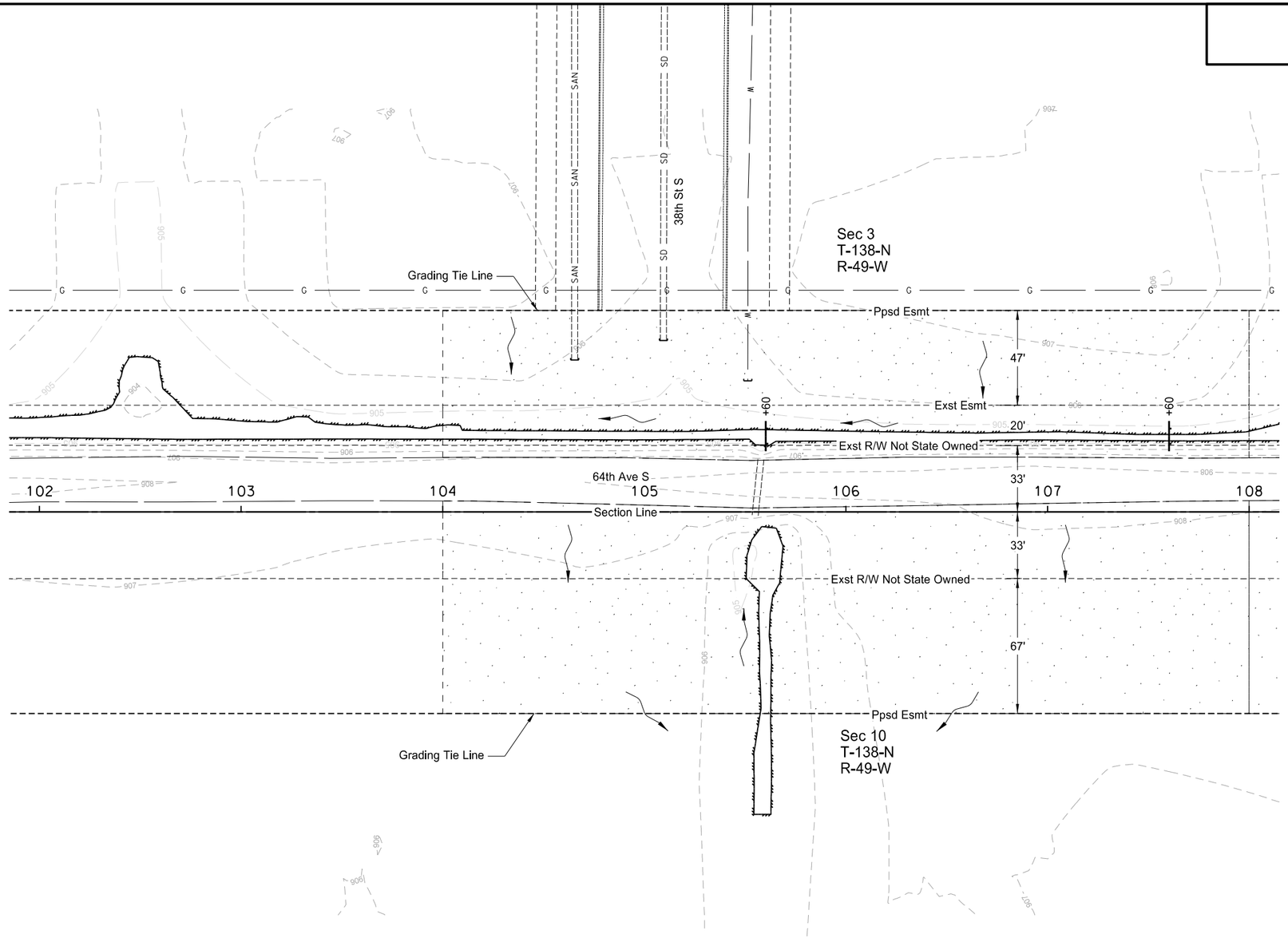
64th Avenue South - 38th St S to 33rd St S

Wetland Impacts

Interstate 29
Sta 3107+00 to 3127+00 (EX29)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	1



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 104+00 to Sta 108+00	1.63	ACRE
253	0101	STRAW MULCH		
		Sta 104+00 to Sta 108+00	1.63	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 104+00 to Sta 108+00	30	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 104+00 to Sta 108+00	30	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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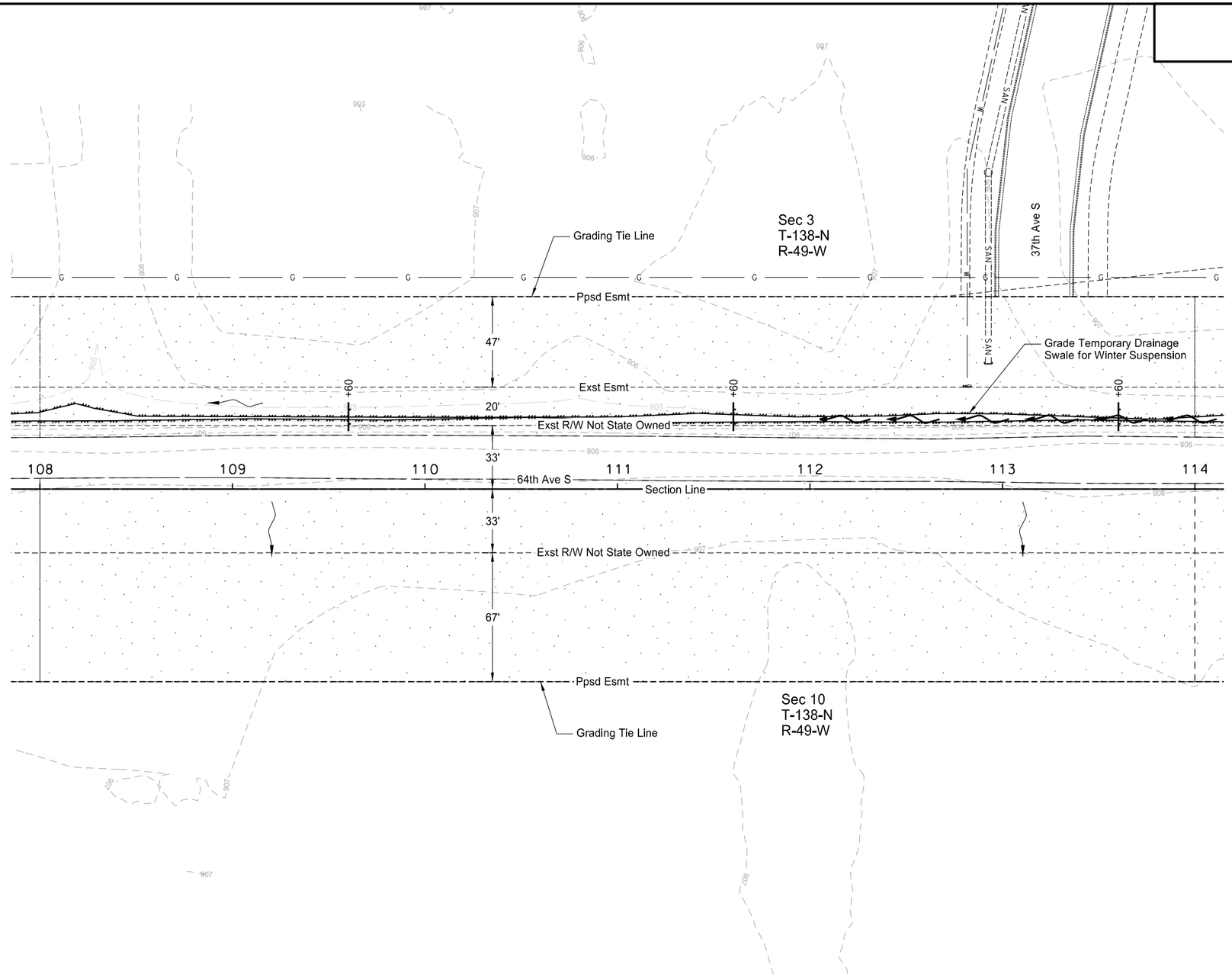
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 104+00 to 108+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	2



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 108+00 to Sta 114+00	2.44	ACRE
253	0101	STRAW MULCH		
		Sta 108+00 to Sta 114+00	2.44	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 108+00 to Sta 114+00	45	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 108+00 to Sta 114+00	45	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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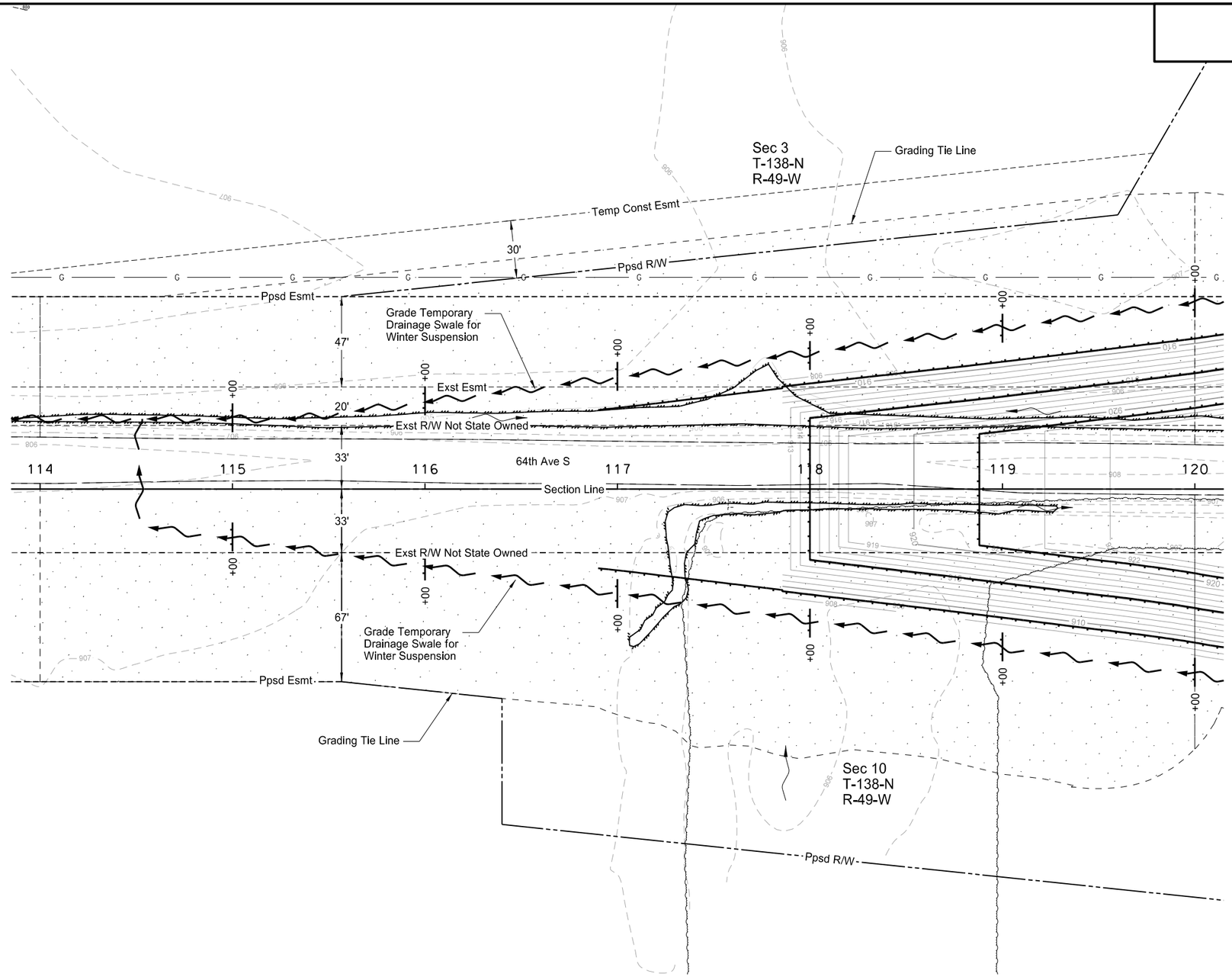
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 108+00 to 114+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	3



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 114+00 to Sta 120+00	3.09	ACRE
253	0101	STRAW MULCH		
		Sta 114+00 to Sta 120+00	3.09	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 114+00 to Sta 120+00	1,566	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 114+00 to Sta 120+00	1,566	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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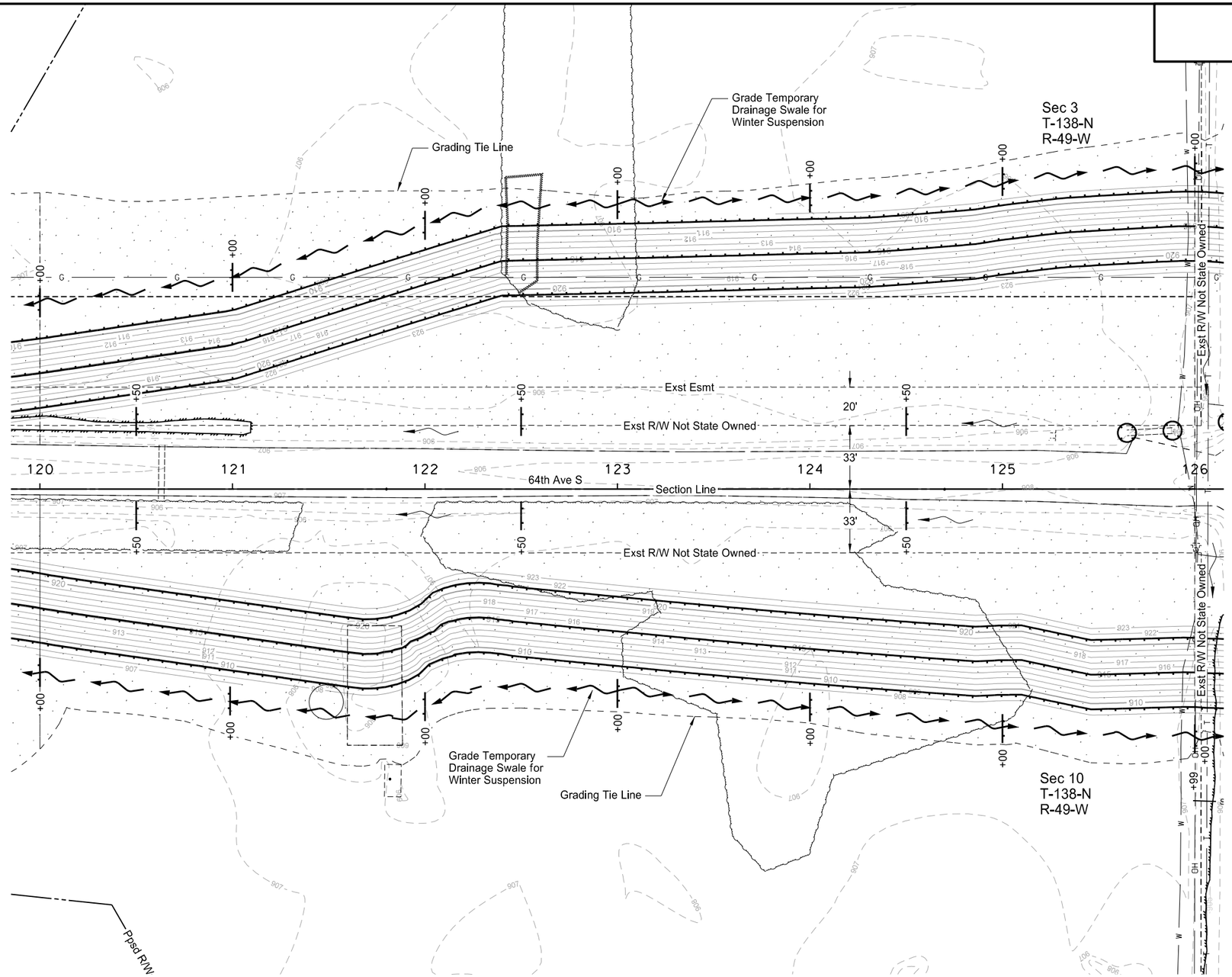
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 114+00 to 120+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	4



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 120+00 to Sta 126+00	3.55	ACRE
253	0101	STRAW MULCH		
		Sta 120+00 to Sta 126+00	3.55	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 120+00 to Sta 126+00	3,980	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 120+00 to Sta 126+00	3,980	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

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64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 120+00 to 126+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	5

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 126+00 to Sta 132+00	1.99	ACRE
253	0101	STRAW MULCH		
		Sta 126+00 to Sta 132+00	1.99	ACRE
260	0200	SILT FENCE SUPPORTED		
		Sta 126+00 to Sta 132+00	507	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
		Sta 126+00 to Sta 132+00	507	LF
261	0112	FIBER ROLLS 12IN		
		Sta 126+00 to Sta 132+00	3,902	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 126+00 to Sta 132+00	3,902	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 126+00 to 132+00 (PR64)

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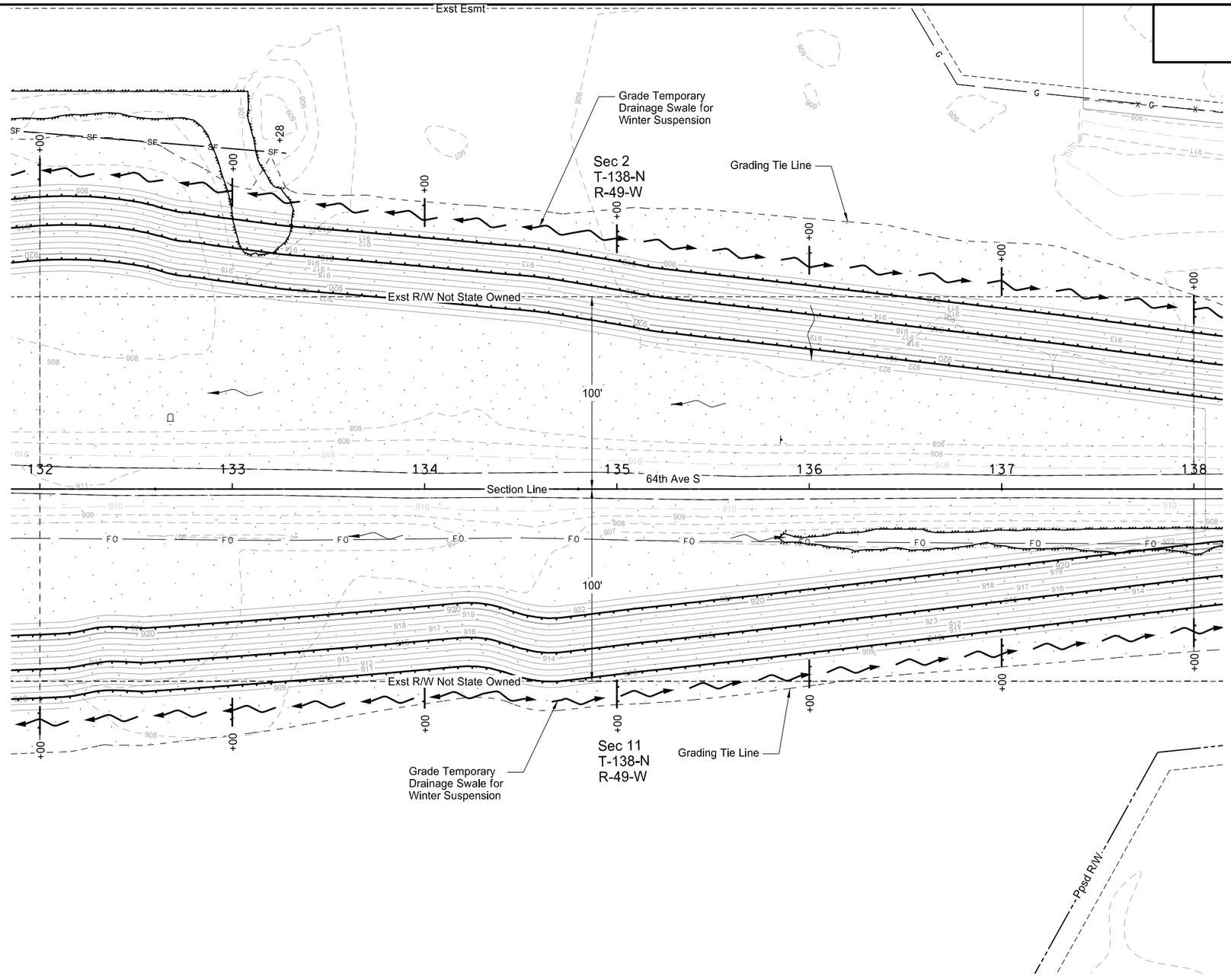
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	5



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 132+00 to Sta 138+00	3.34	ACRE
253	0101	STRAW MULCH		
		Sta 132+00 to Sta 138+00	3.34	ACRE
260	0200	SILT FENCE SUPPORTED		
		Sta 132+00 to Sta 138+00	128	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
		Sta 132+00 to Sta 138+00	128	LF
261	0112	FIBER ROLLS 12IN		
		Sta 132+00 to Sta 138+00	3,807	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 132+00 to Sta 138+00	3,807	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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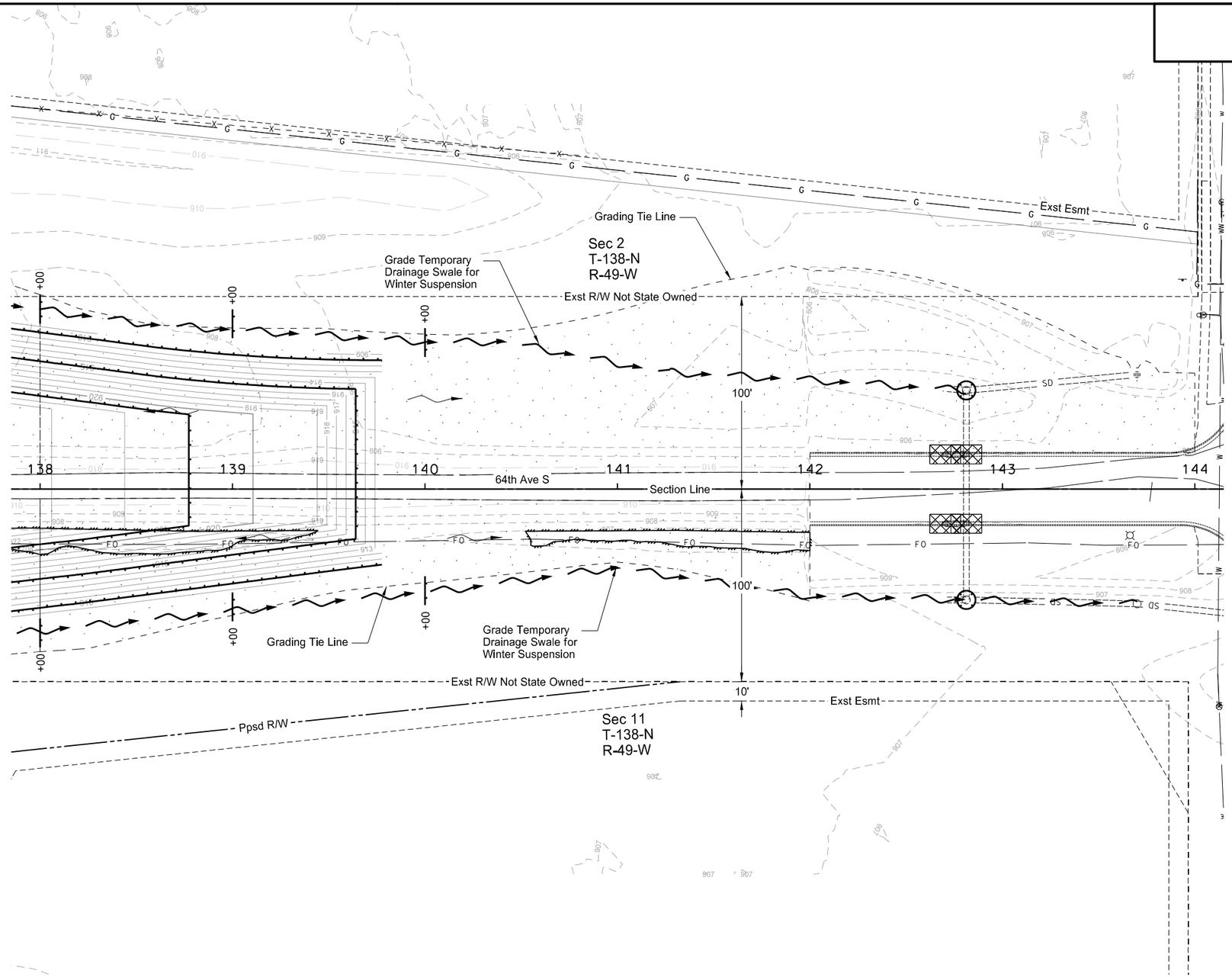
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 132+00 to 138+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	7



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 138+00 to Sta 142+00	1.55	ACRE
253	0101	STRAW MULCH		
		Sta 138+00 to Sta 142+00	1.55	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 138+00 to Sta 142+00	1,099	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 138+00 to Sta 142+00	1,099	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 138+00 to Sta 142+00	4	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 138+00 to Sta 142+00	4	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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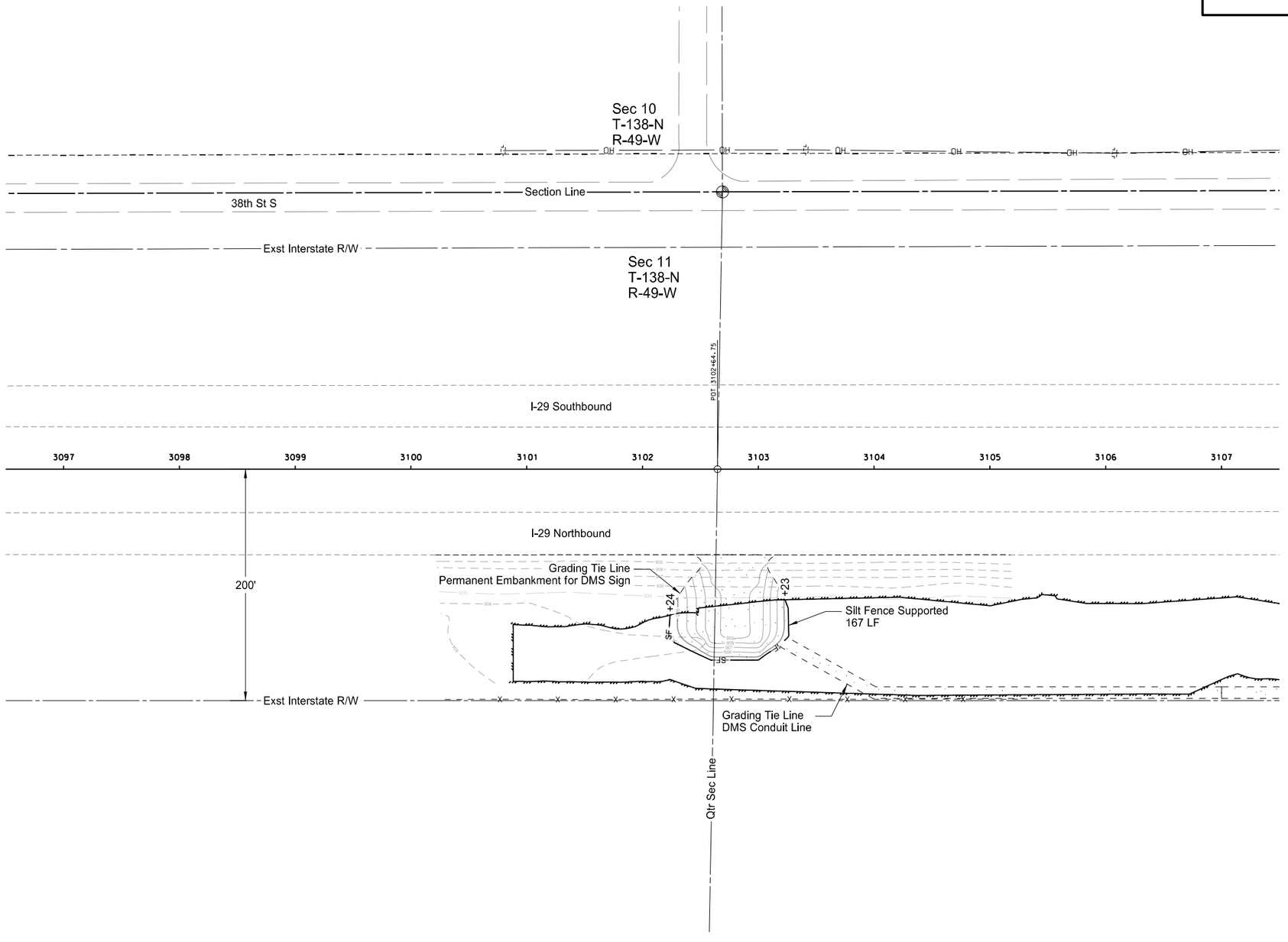
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 Surcharge

64th Avenue South
Sta 138+00 to 144+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	8



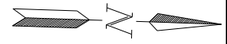
SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 3102+00 to 3107+00	0.26	ACRE
253	0101	STRAW MULCH		
		Sta 3102+00 to 3107+00	0.26	ACRE
260	0200	SILT FENCE SUPPORTED		
		Sta 3102+00 to 3107+00	167	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
		Sta 3102+00 to 3107+00	167	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)



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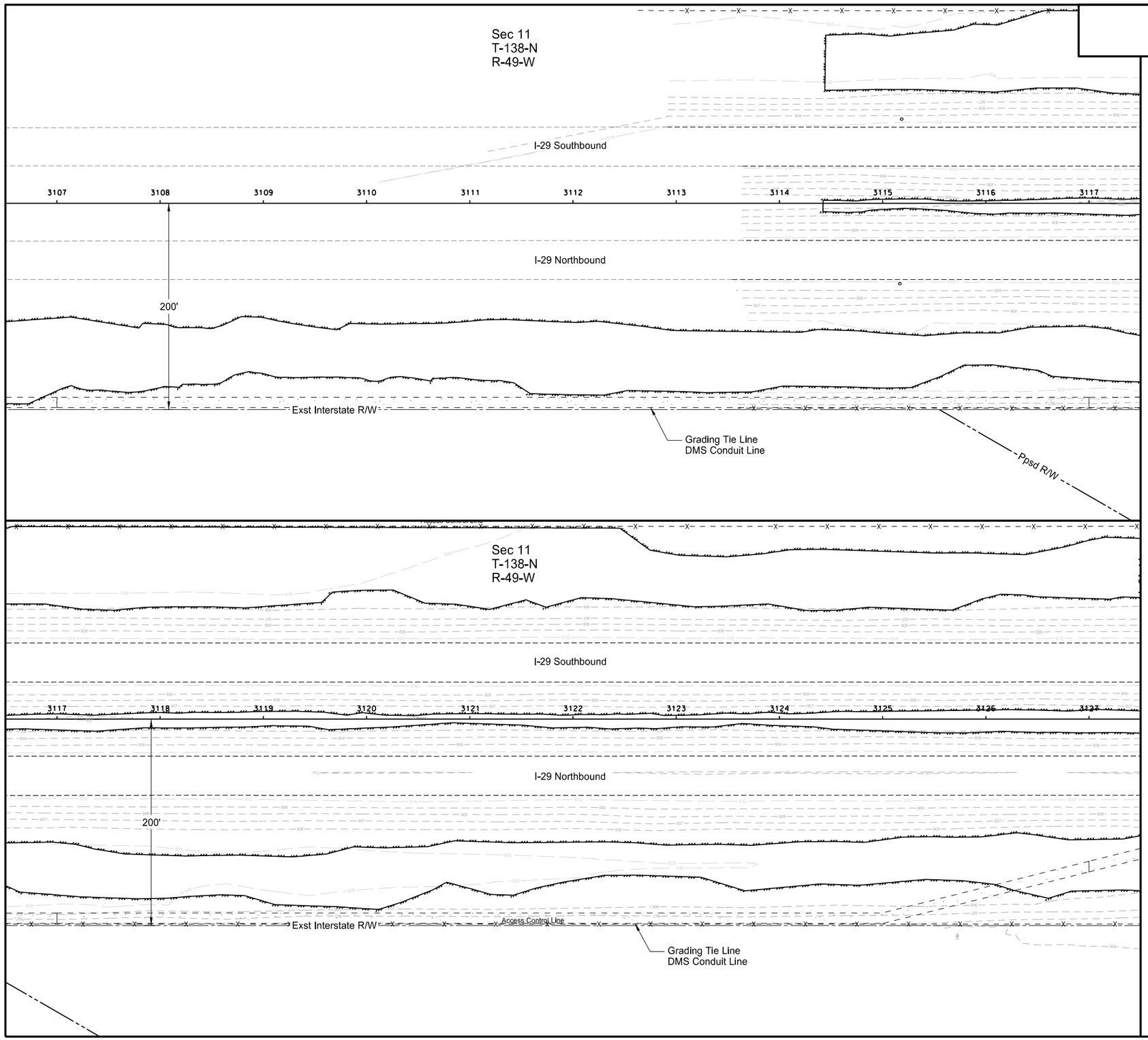
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 DMS & Conduit

Interstate 29
Sta 3097+00 to 3107+00 (EX29)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	9



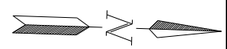
SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 3107+00 to 3117+00	0.23	ACRE
		Sta 3117+00 to 3127+00	0.23	ACRE
253	0100	STRAW MULCH		
		Sta 3107+00 to 3117+00	0.23	SY
		Sta 3117+00 to 3127+00	0.23	SY

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)



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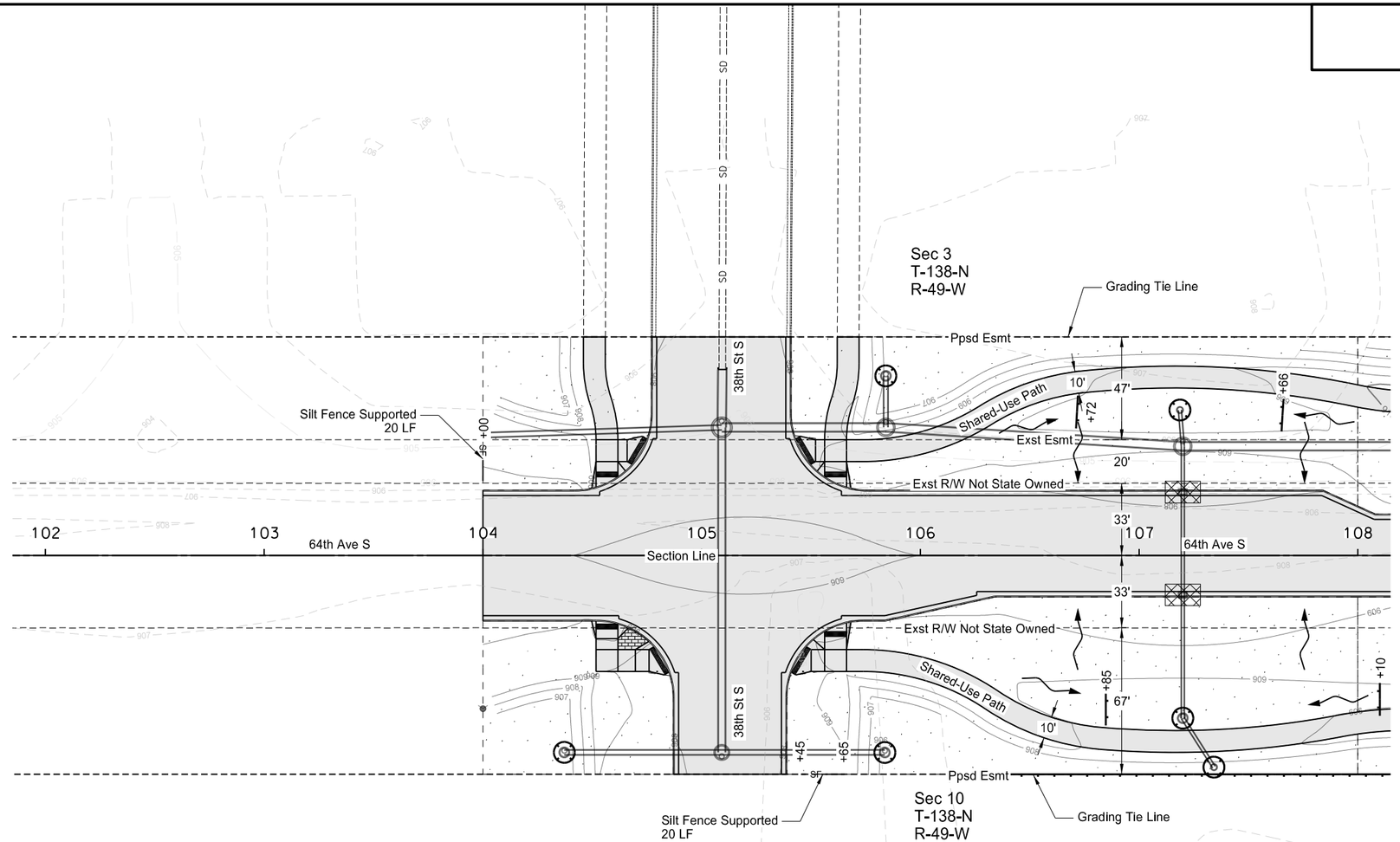
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2021 DMS & Conduit

Interstate 29
Sta 3107+00 to 3127+00 (EX29)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	10



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 104+00 to Sta 108+00	0.98	ACRE
253	0101	STRAW MULCH		
		Sta 104+00 to Sta 108+00	0.98	ACRE
260	0200	SILT FENCE SUPPORTED		
		Sta 104+00 to Sta 108+00	40	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
		Sta 104+00 to Sta 108+00	40	LF
261	0112	FIBER ROLLS 12IN		
		Sta 104+00 to Sta 108+00	395	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 104+00 to Sta 108+00	395	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 104+00 to Sta 108+00	2	EA
		Existing Inlets on 38th Street	4	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 104+00 to Sta 108+00	2	EA
		Existing Inlets on 38th Street	4	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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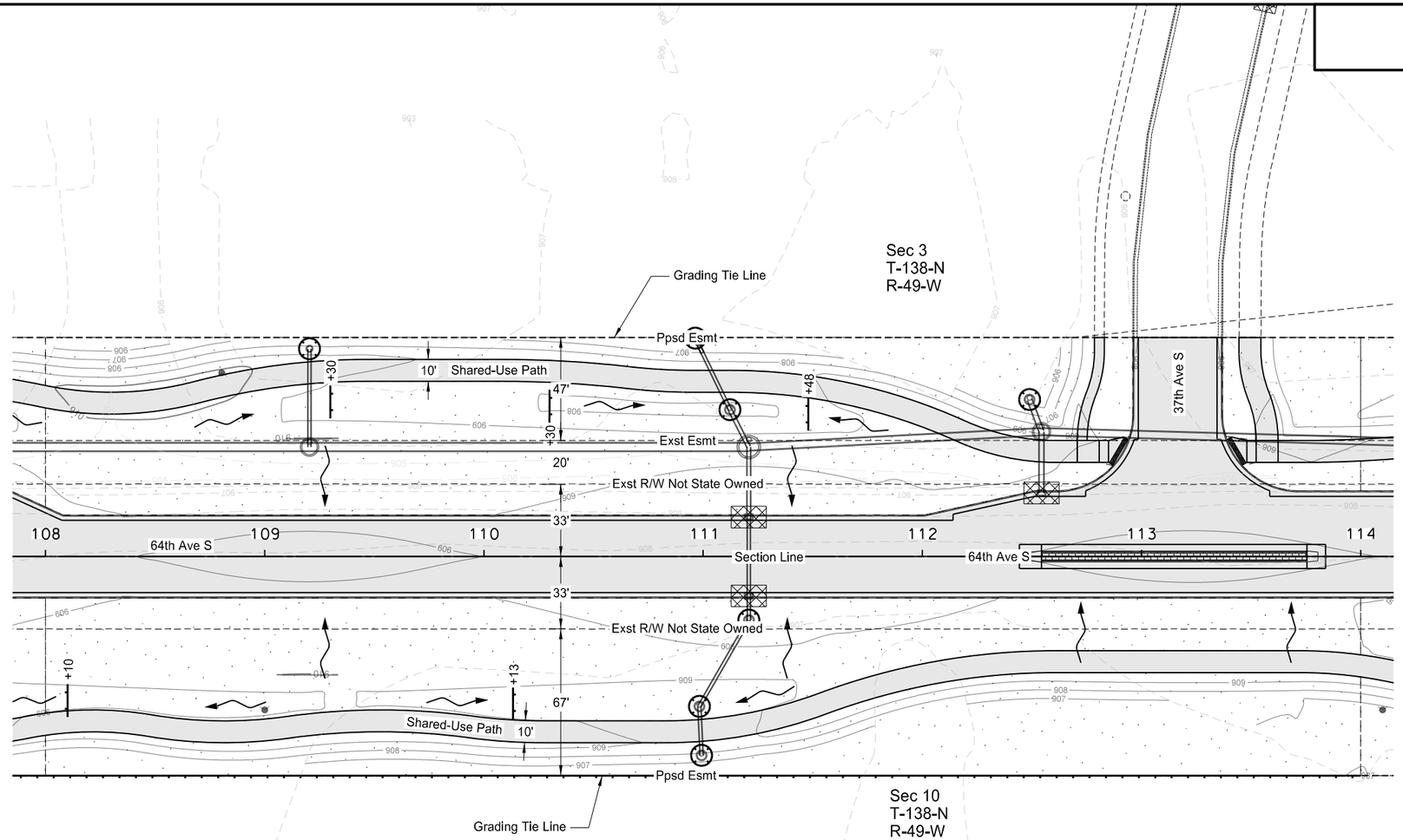
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 104+00 to 108+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	11



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 108+00 to Sta 114+00	1.84	ACRE
253	0101	STRAW MULCH		
		Sta 108+00 to Sta 114+00	1.84	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 108+00 to Sta 114+00	885	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 108+00 to Sta 114+00	885	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 108+00 to Sta 114+00	3	EA
		Existing Inlets on 37th Street	4	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 108+00 to Sta 114+00	3	EA
		Existing Inlets on 37th Street	4	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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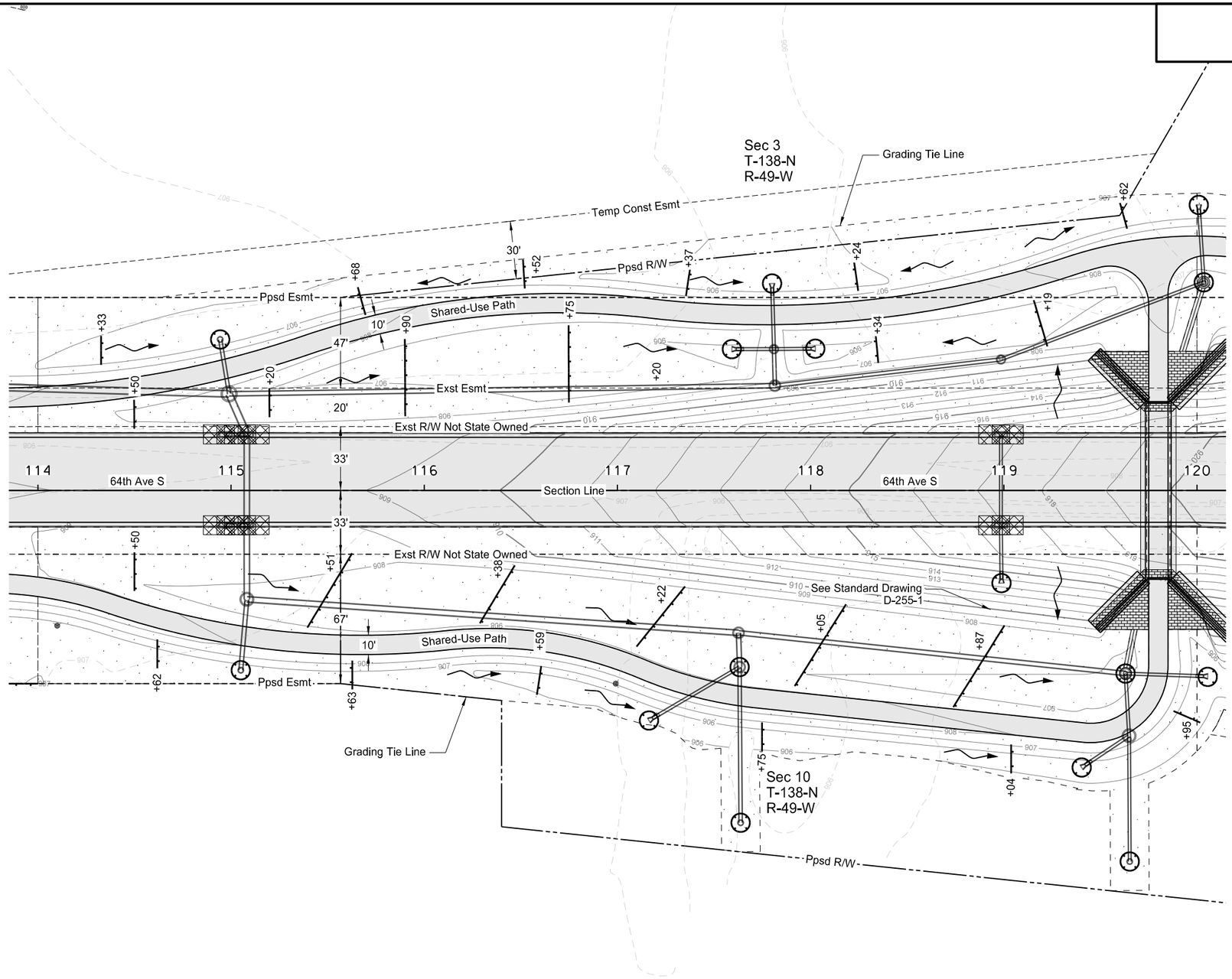
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 108+00 to 114+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	12



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 114+00 to Sta 120+00	2.40	ACRE
253	0101	STRAW MULCH		
		Sta 114+00 to Sta 120+00	2.40	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 114+00 to Sta 120+00	930	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 114+00 to Sta 120+00	930	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 114+00 to Sta 120+00	12	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 114+00 to Sta 120+00	12	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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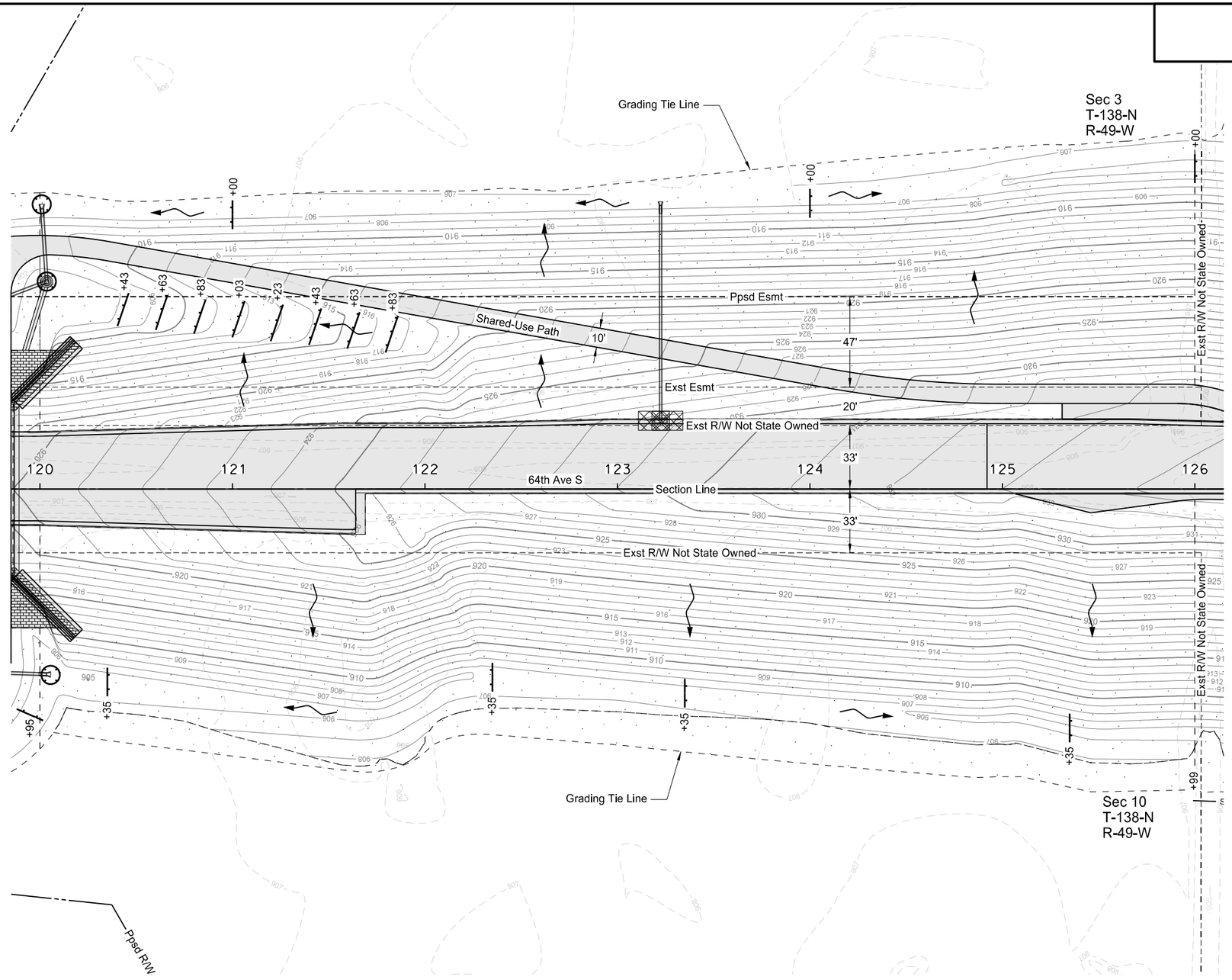
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 114+00 to 120+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	13



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 120+00 to Sta 126+00	3.42	ACRE
253	0101	STRAW MULCH		
		Sta 120+00 to Sta 126+00	3.42	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 120+00 to Sta 126+00	355	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 120+00 to Sta 126+00	355	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 120+00 to Sta 126+00	2	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 120+00 to Sta 126+00	2	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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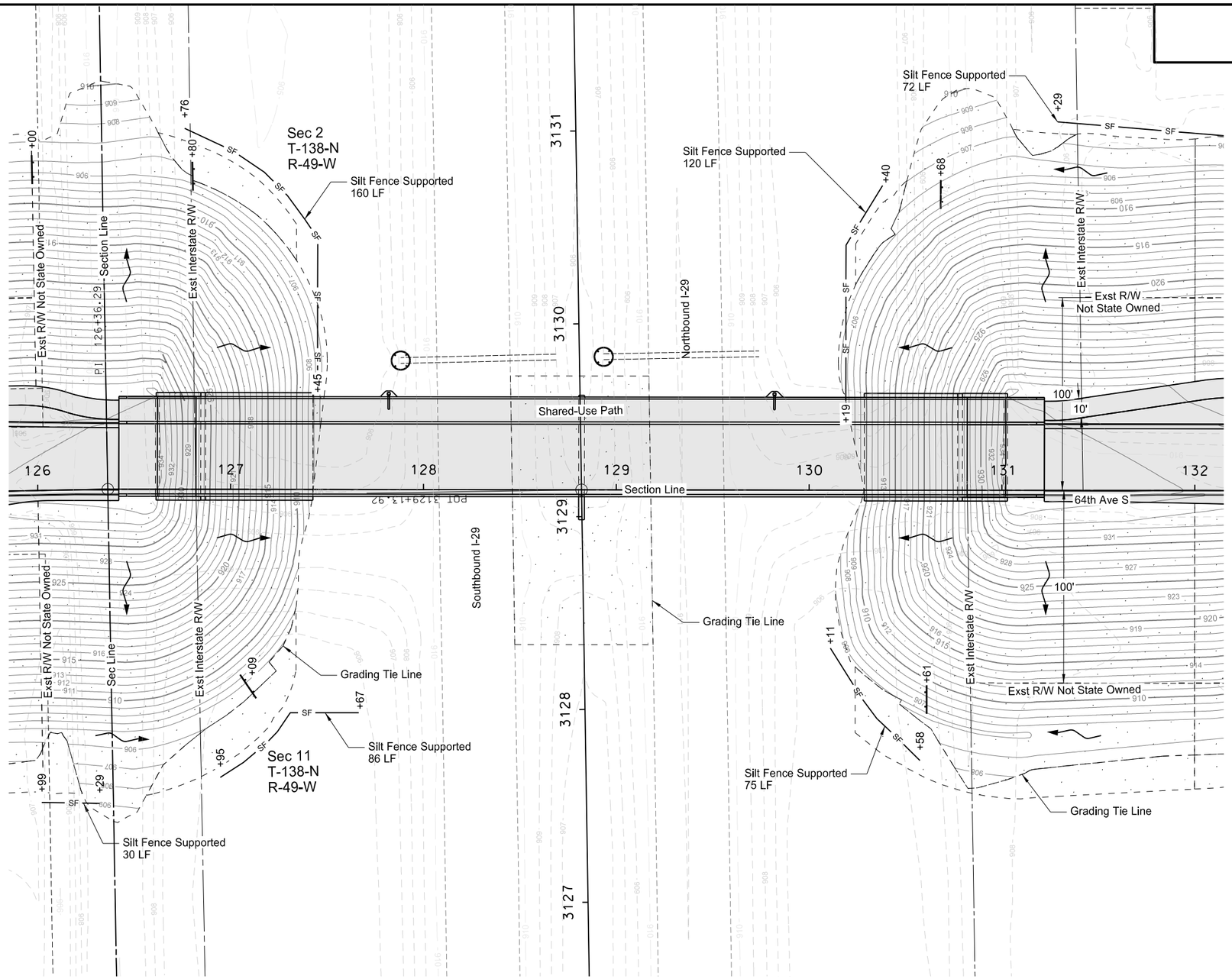
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 120+00 to 126+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	14



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 126+00 to Sta 132+00	2.39	ACRE
253	0101	STRAW MULCH		
		Sta 126+00 to Sta 132+00	2.39	ACRE
260	0200	SILT FENCE SUPPORTED		
		Sta 126+00 to Sta 132+00	543	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
		Sta 126+00 to Sta 132+00	543	LF
261	0112	FIBER ROLLS 12IN		
		Sta 126+00 to Sta 132+00	120	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 126+00 to Sta 132+00	120	LF

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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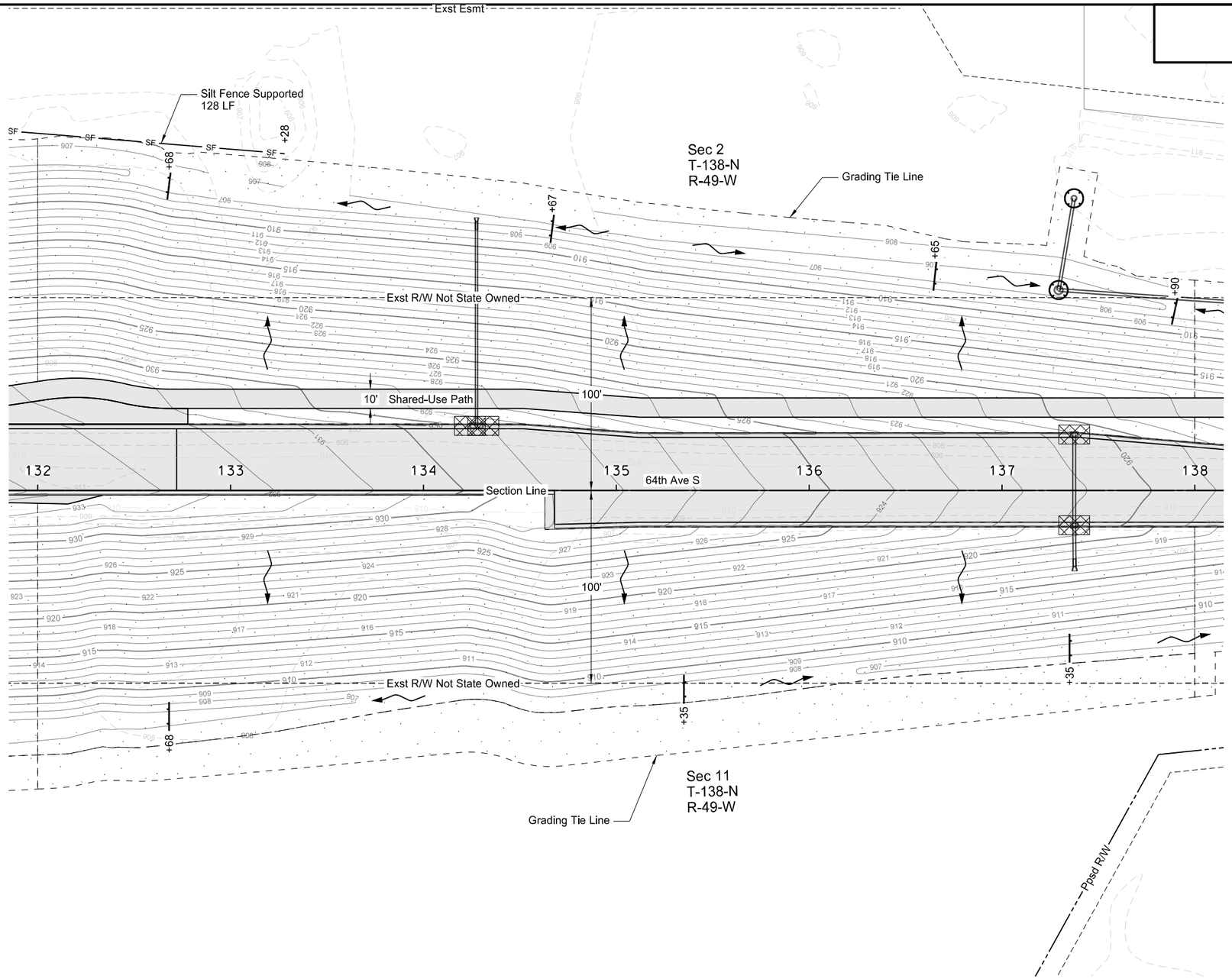
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 126+00 to 132+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	15



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 132+00 to Sta 138+00	3.18	ACRE
253	0101	STRAW MULCH		
		Sta 132+00 to Sta 138+00	3.18	ACRE
260	0200	SILT FENCE SUPPORTED		
		Sta 132+00 to Sta 138+00	128	LF
260	0201	REMOVE SILT FENCE SUPPORTED		
		Sta 132+00 to Sta 138+00	128	LF
261	0112	FIBER ROLLS 12IN		
		Sta 132+00 to Sta 138+00	165	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 132+00 to Sta 138+00	165	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 132+00 to Sta 138+00	4	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 132+00 to Sta 138+00	4	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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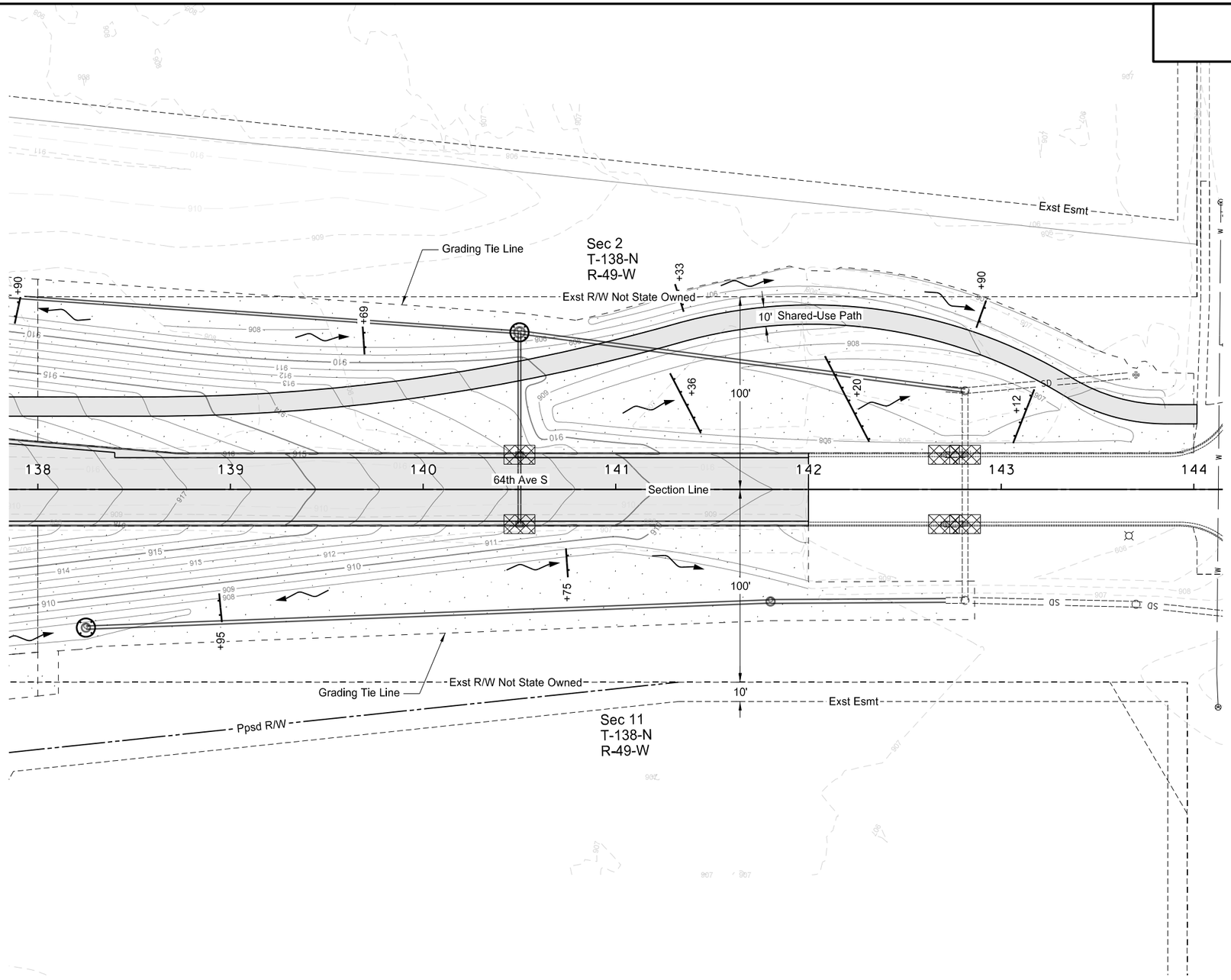
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 132+00 to 138+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	76	16



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 138+00 to Sta 144+00	1.50	ACRE
253	0101	STRAW MULCH		
		Sta 138+00 to Sta 144+00	1.50	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 138+00 to Sta 144+00	310	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 138+00 to Sta 144+00	310	LF
708	1540	INLET PROTECTION-SPECIAL		
		Sta 138+00 to Sta 144+00	6	EA
708	1541	REMOVE INLET PROTECTION-SPECIAL		
		Sta 138+00 to Sta 144+00	6	EA

For ditch grades encountered in the field not listed, use the following spacing:
Spacing = { Diameter of Roll (ft) - Entrenchment (ft) } / Slope (ft/ft)

DITCH FIBER SPACING	
Ditch Grade	Spacing (ft)
<0.5%	200
1%	85
2%	40
3%	30
4%	20

LEGEND

- Existing Wetland
- Inlet Protection - Special
- Straw Mulch & Temporary Cover Crop
- Fiber Rolls 12IN
- SF — Silt Fence Supported
- Existing Flow Line
- Proposed Flow Line (Winter Suspension)

N

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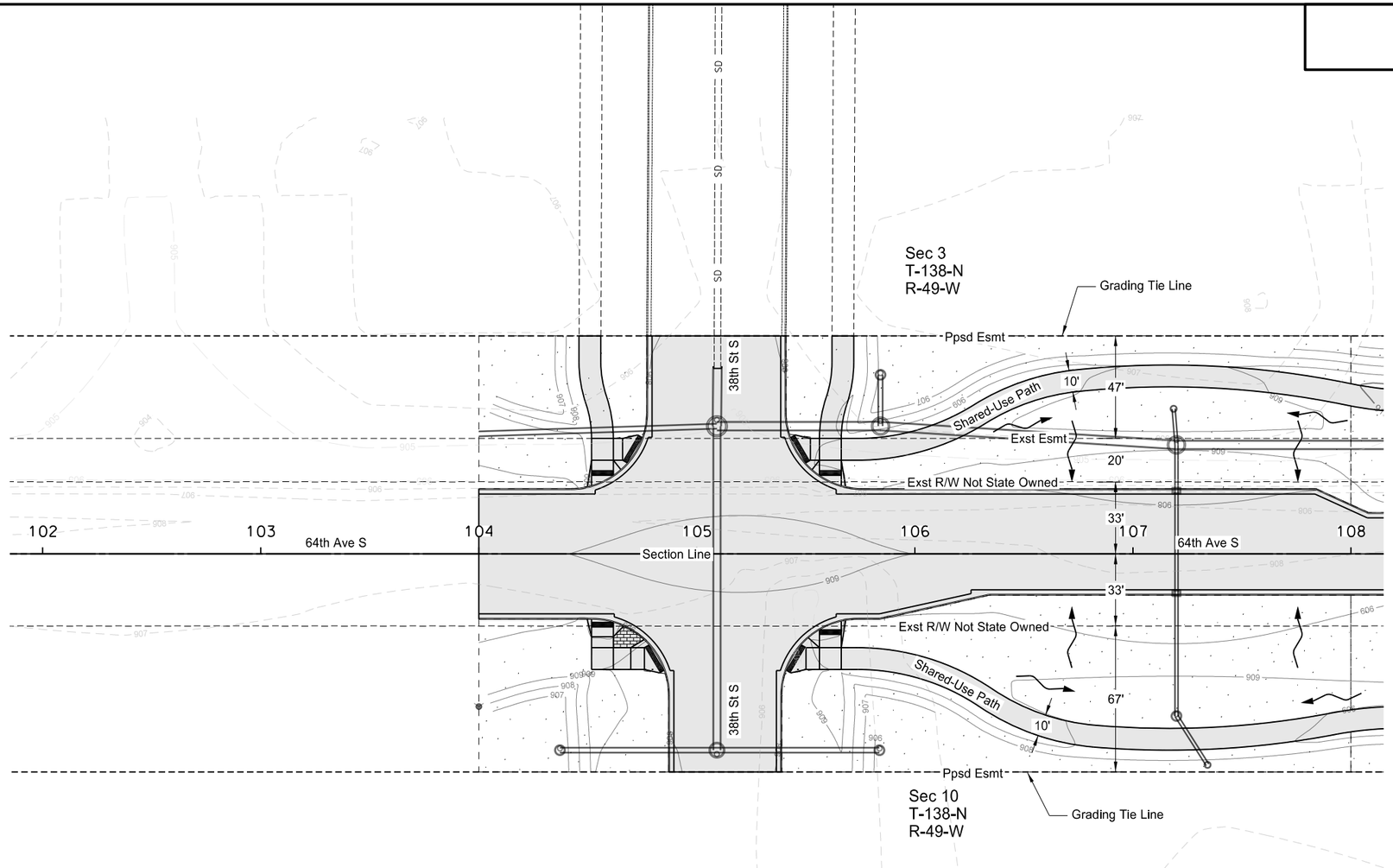
64th Avenue South - 38th St S to 33rd St S

Temporary Erosion Control - 2022 Roadway

64th Avenue South
Sta 138+00 to 144+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	77	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 104+00 to Sta 108+00	0.98	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 104+00 to Sta 108+00	0.98	ACRE



LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

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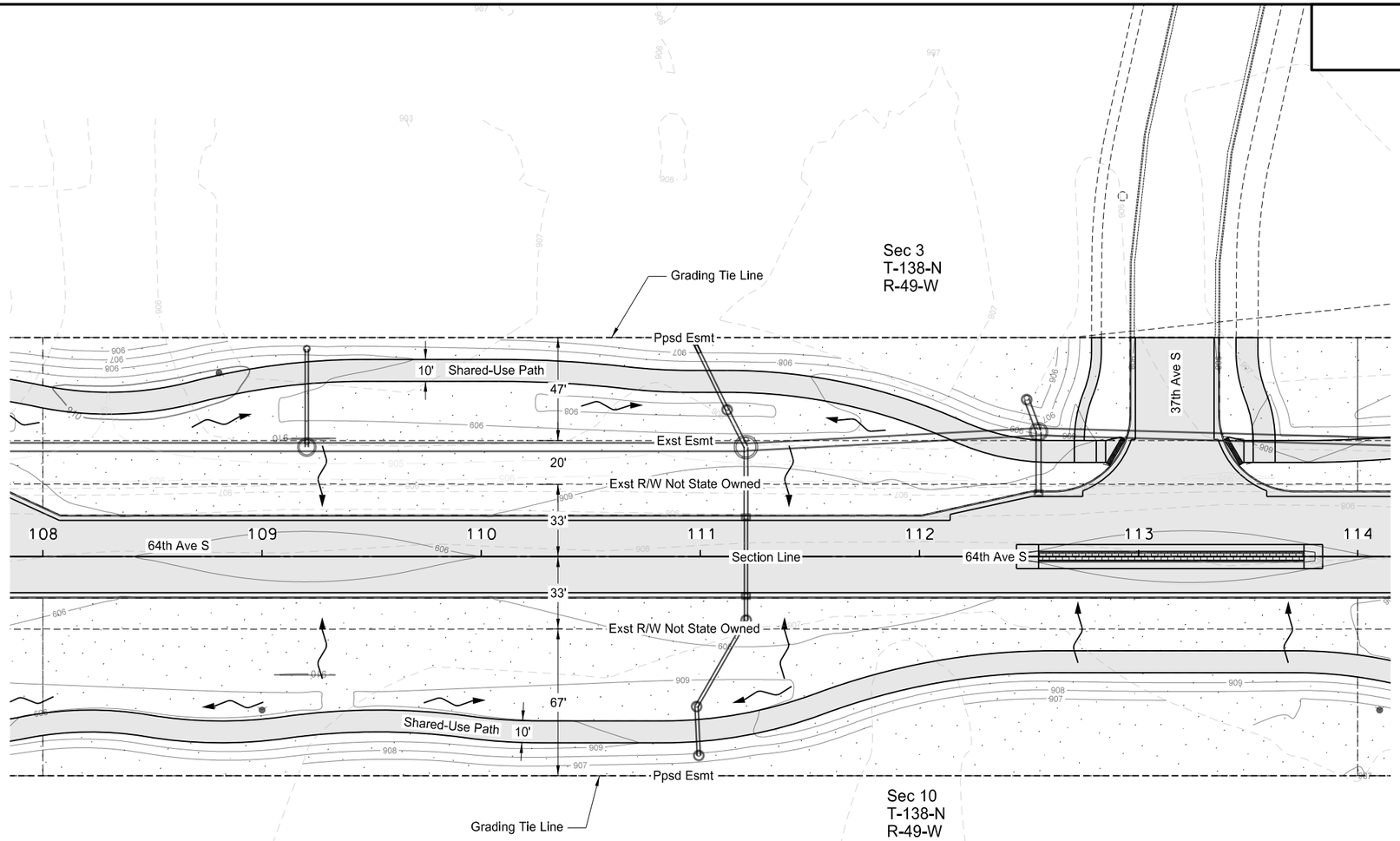
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 104+00 to 108+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 108+00 to Sta 114+00	1.84	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 108+00 to Sta 114+00	1.84	ACRE



LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

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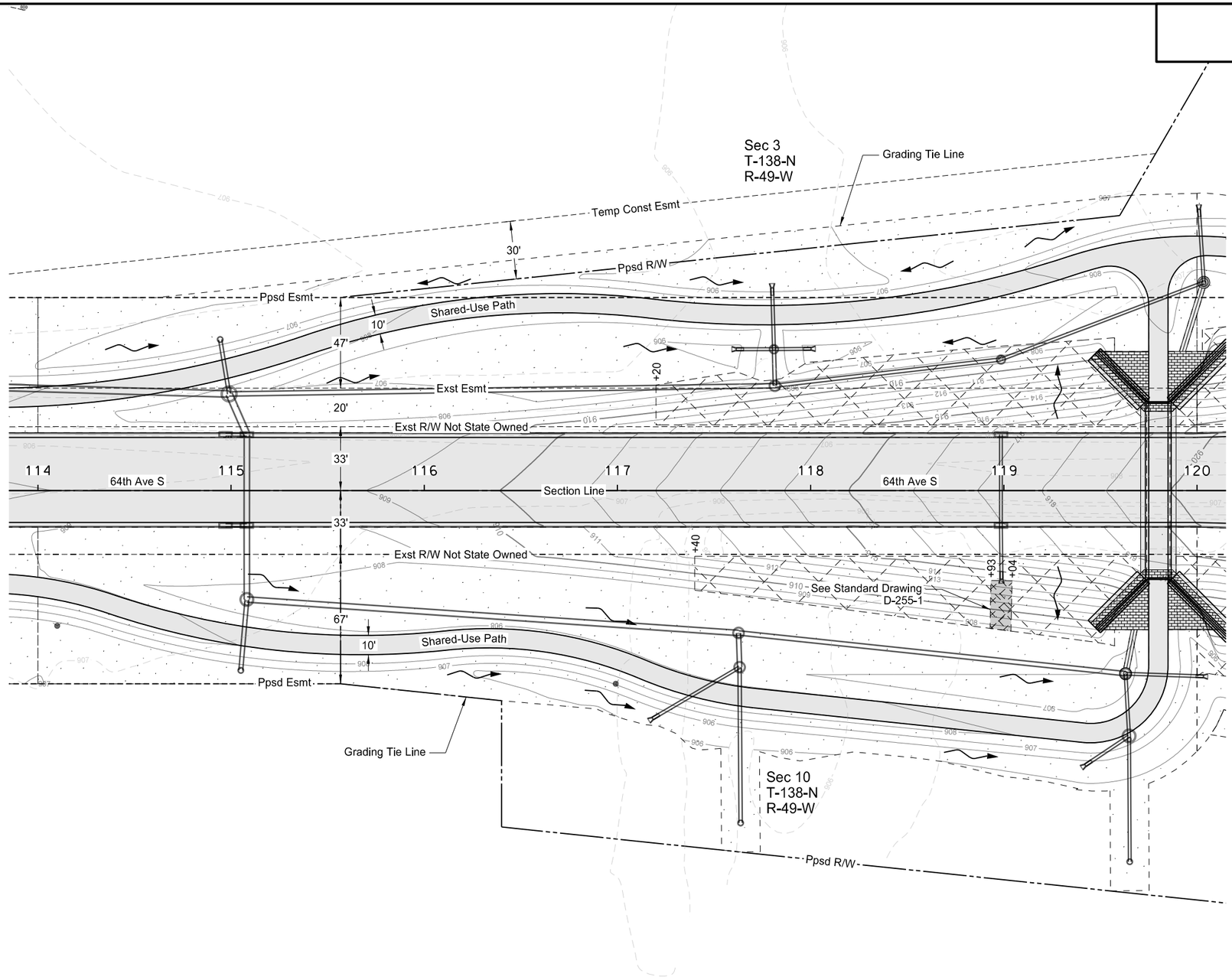
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 108+00 to 114+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	3



SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 114+00 to Sta 120+00	2.40	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 114+00 to Sta 120+00	2.05	ACRE
255	0102	ECB TYPE 2		
		Sta 114+00 to Sta 120+00	1,726	SY
255	0202	TRM TYPE 2		
		Sta 114+00 to Sta 120+00	31	SY

LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

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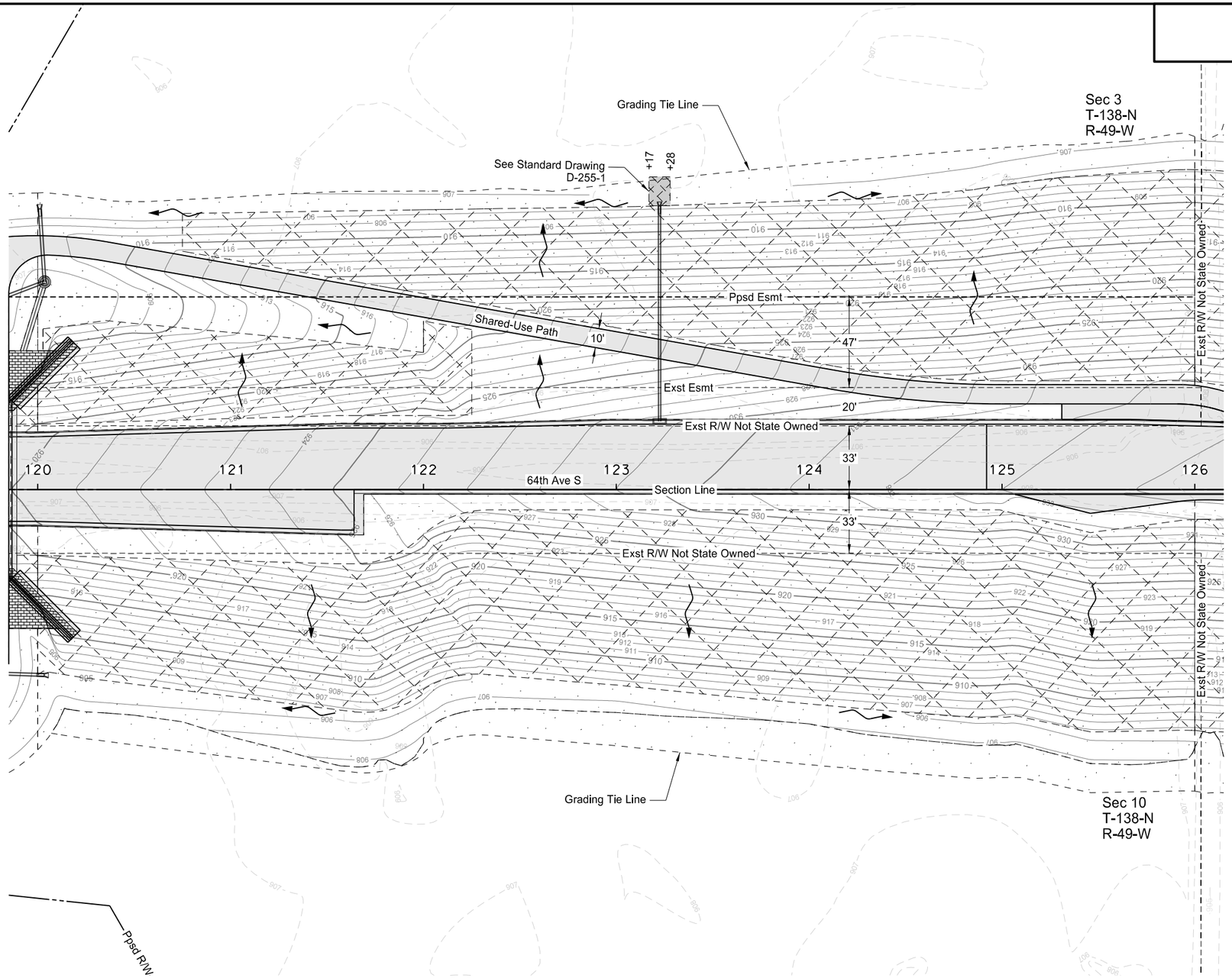
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 114+00 to 120+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	4



SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 120+00 to Sta 126+00	3.42	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 120+00 to Sta 126+00	1.14	ACRE
255	0102	ECB TYPE 2		
		Sta 120+00 to Sta 126+00	11,037	SY
255	0202	TRM TYPE 2		
		Sta 120+00 to Sta 126+00	18	SY

LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

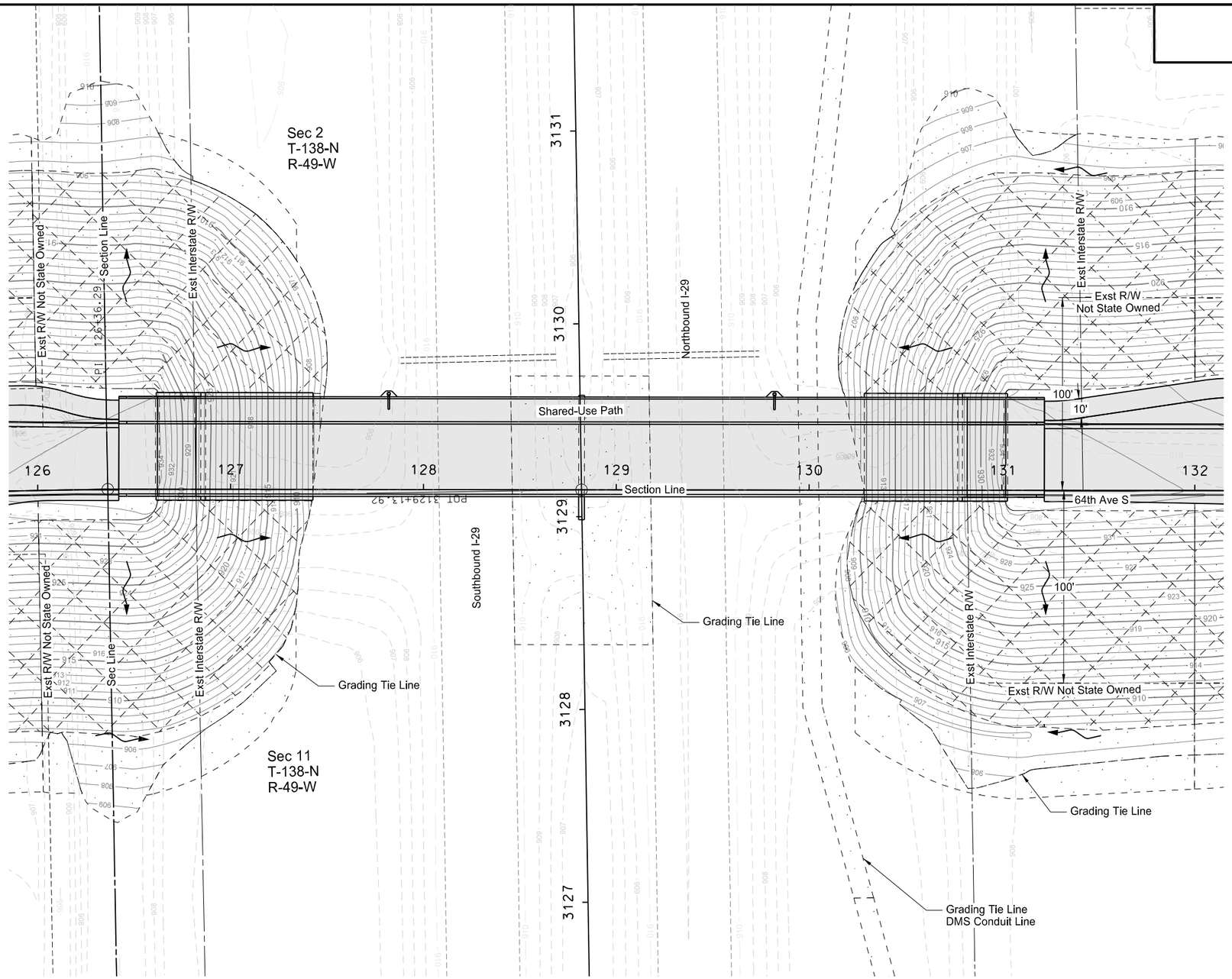
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 120+00 to Sta 126+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	5

SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 126+00 to Sta 132+00	2.39	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 126+00 to Sta 132+00	0.86	ACRE
255	0102	ECB TYPE 2		
		Sta 126+00 to Sta 132+00	7,379	SY



LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

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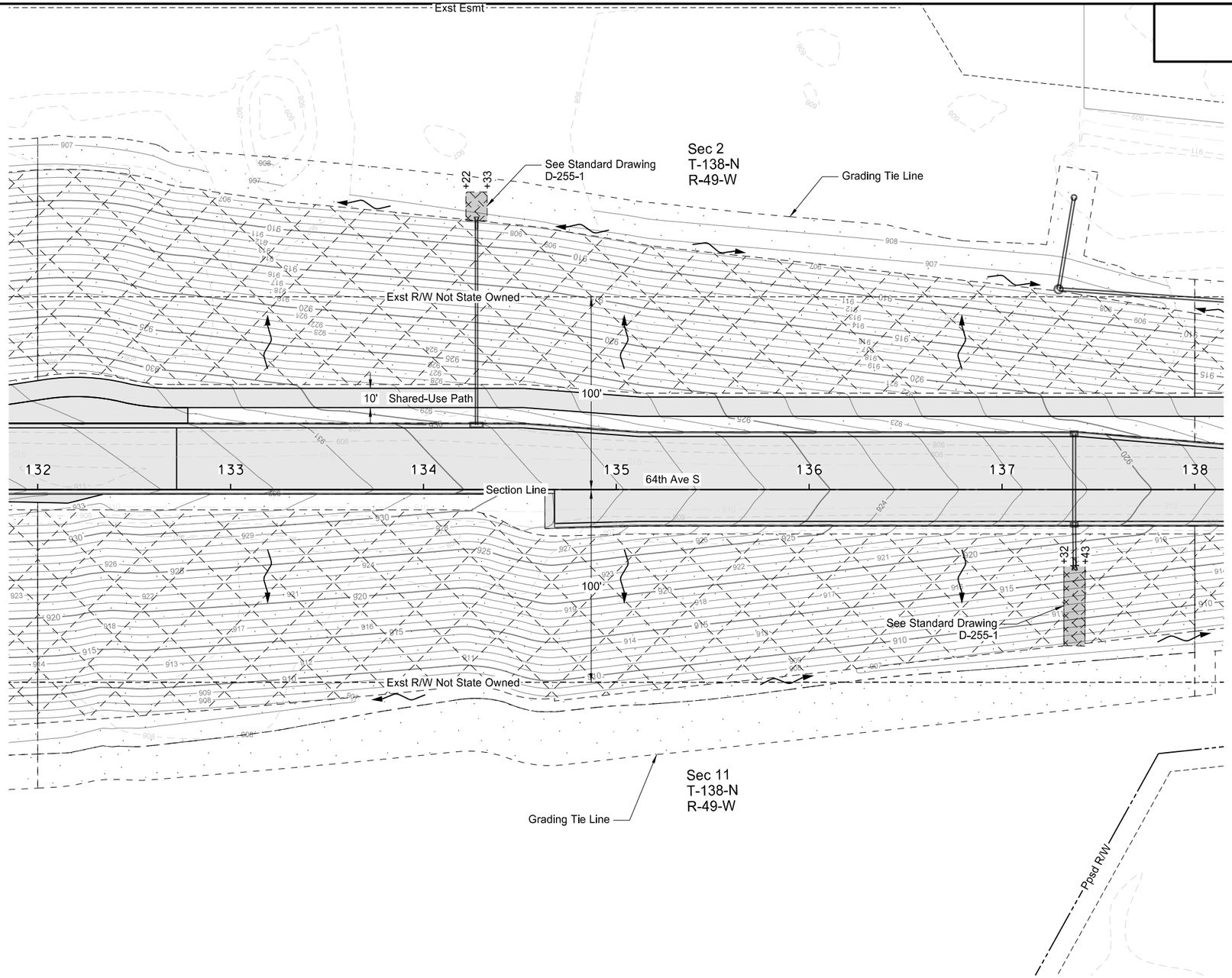
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 126+00 to 132+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	6



SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 132+00 to Sta 138+00	3.18	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 132+00 to Sta 138+00	0.99	ACRE
255	0102	ECB TYPE 2		
		Sta 132+00 to Sta 138+00	10,603	SY
255	0202	TRM TYPE 2		
		Sta 132+00 to Sta 138+00	69	SY

LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

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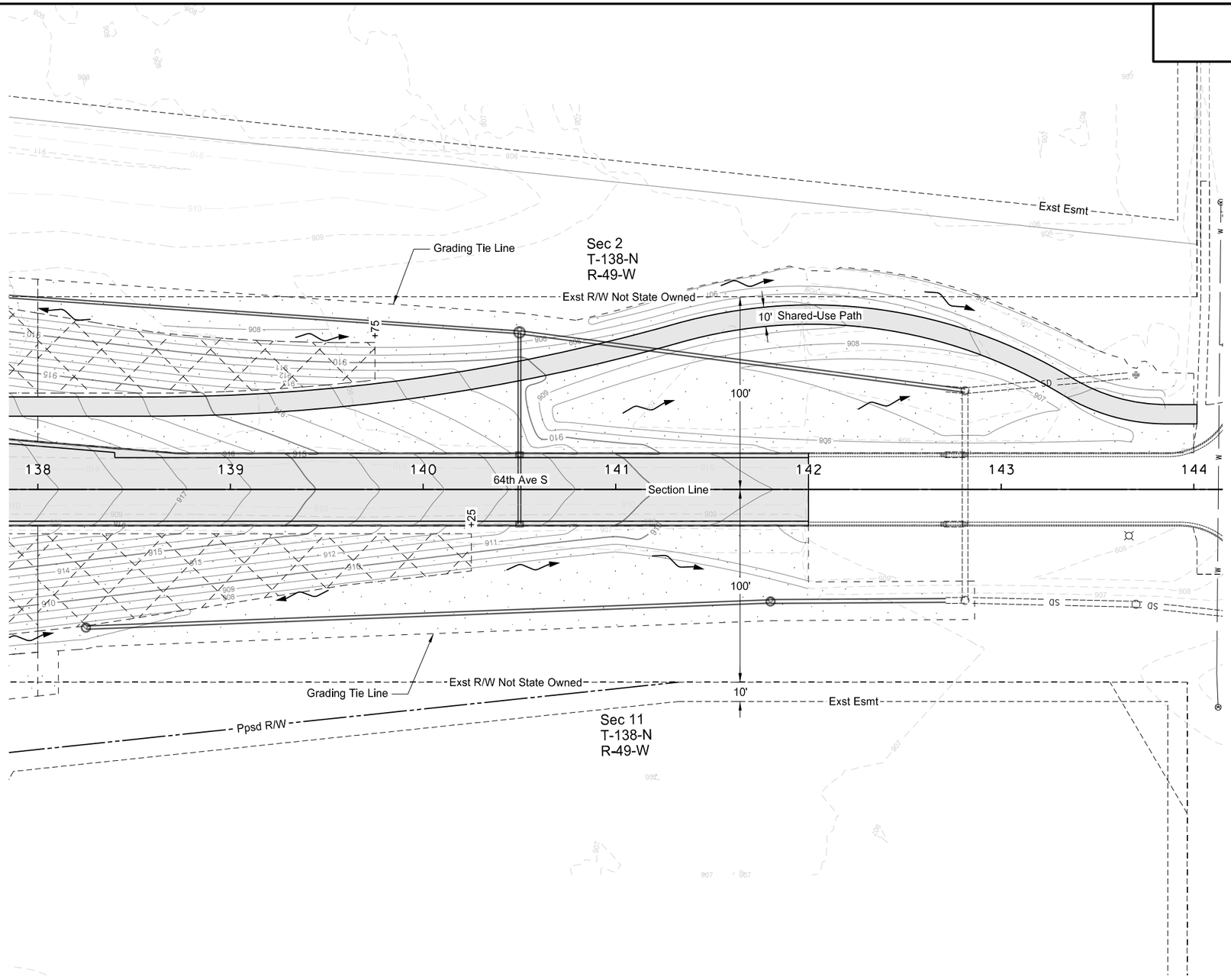
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 132+00 to 138+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	7

SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 138+00 to Sta 144+00	1.50	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 138+00 to Sta 144+00	1.20	ACRE
255	0102	ECB TYPE 2		
		Sta 138+00 to Sta 144+00	1,430	SY



LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

N

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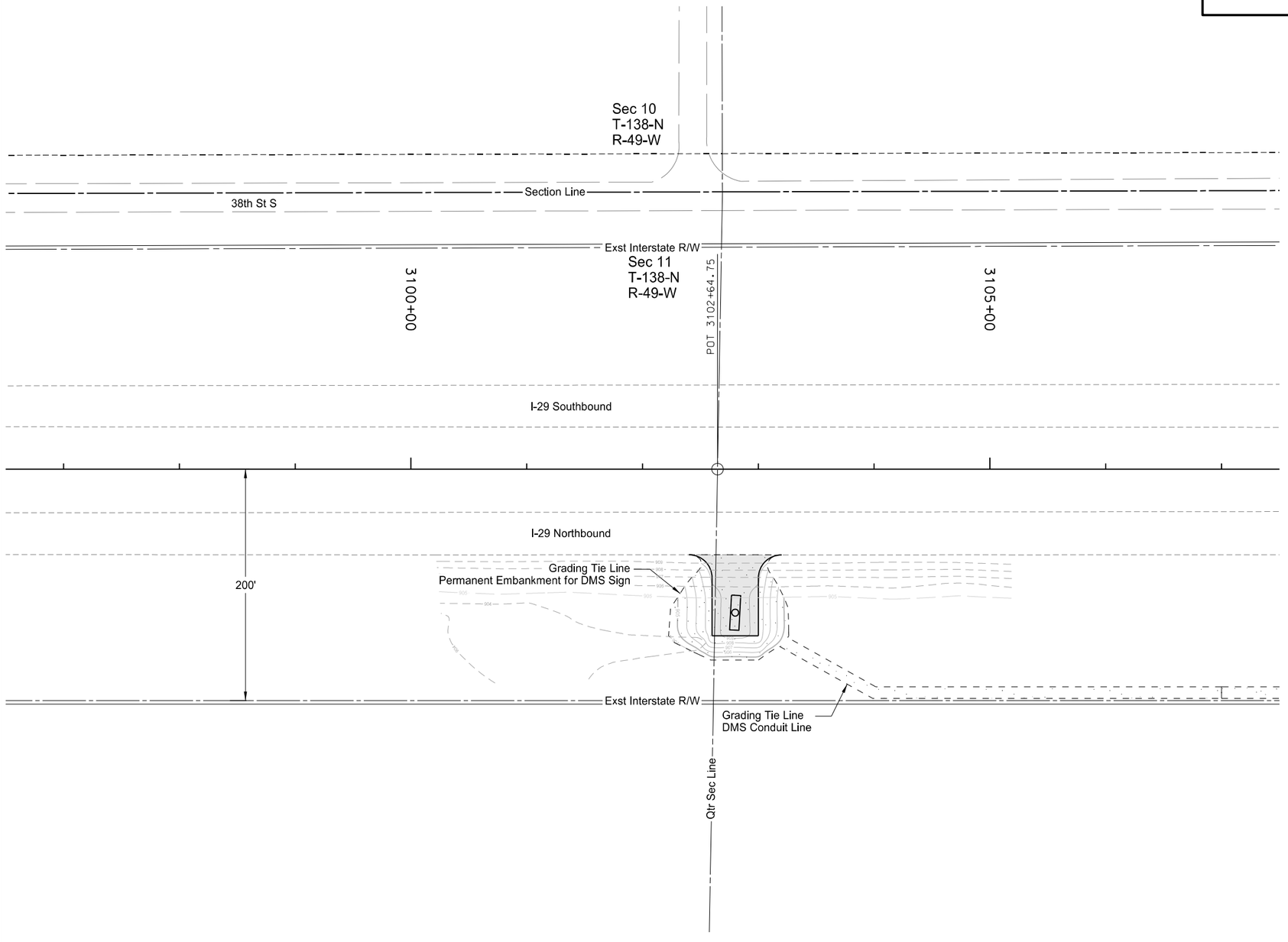
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

64th Avenue South
Sta 138+00 to 144+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	77	8

SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 3102+00 to 3107+00	0.26	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 3102+00 to 3107+00	0.26	ACRE



LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

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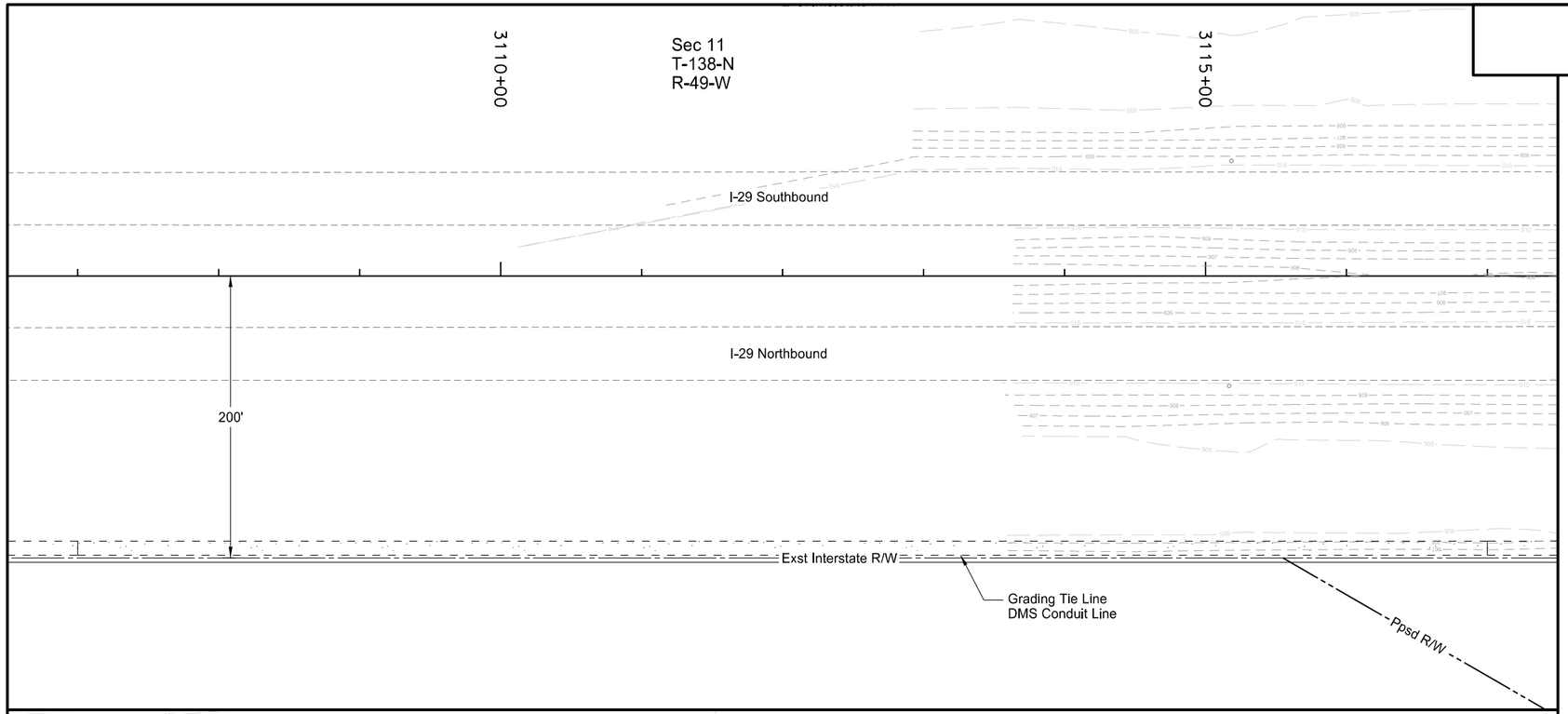
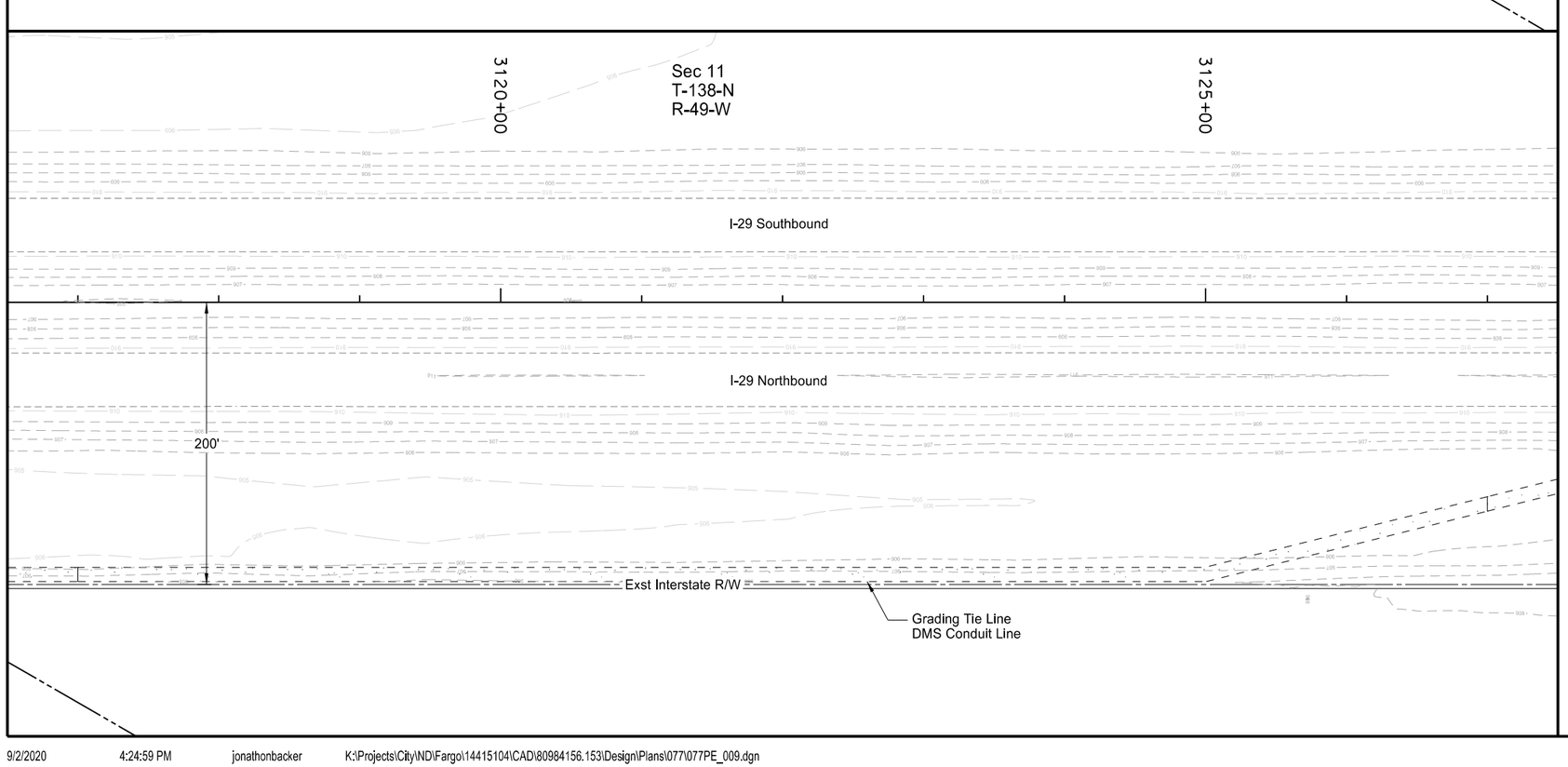
64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

Interstate 29
Sta 3097+00 to 3107+00 (EX29)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	77	9





SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 3107+00 to 3117+00	0.23	ACRE
		Sta 3117+00 to 3127+00	0.23	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 3107+00 to 3117+00	0.23	ACRE
		Sta 3117+00 to 3127+00	0.23	ACRE

LEGEND

- Seeding Class III & Hydraulic Mulch
- ECB Type 2
- TRM Type 2
- Proposed Flow Line

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64th Avenue South - 38th St S to 33rd St S

Permanent Erosion Control

Interstate 29
Sta 3107+00 to 3127+00 (EX29)

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	80	1

SPEC	CODE	BID ITEM	QTY	UNIT
752	0600	FENCE CHAIN LINK Winter Suspension Fence	813	LF
752	0922	FENCE REMOVE & RESET Winter Suspension Fence to Perm. Location	813	LF
752	2996	CORNER ASSEMBLY-STEEL POST Winter Suspension & Permanent	8	EA

Note: Remove 813 LF Chain Link Fence (Winter Suspension) & Reset 672 LF Chain Link Fence (Permanent). Reuse Corner Assemblies from Winter Suspension for Permanent Fence. Stockpile exess fence material at locations designated by the Engineer within the project limits.

Corner Assembly
Connect to Existing
Sta 126+78.19 - 200' LT

Corner Assembly
Sta 126+78.73 - 170' RT

Sec 3
T-138-N
R-49-W

157 LF
Chain Link Fence
(Permanent)

Exst R/W Not State Owned

Section Line

Exst Interstate R/W

Sec 2
T-138-N
R-49-W

413 LF
Chain Link Fence
(For Winter Suspension)

Corner Assembly
Sta 127+52.37 - 128' LT

Southbound I-29

Northbound I-29

3132

3131

3130

3129

3128

3127

Corner Assembly
Sta 130+06.79 - 178' LT

Corner Assembly
Connect to Existing
Sta 130+28.52 - 200' LT

Corner Assembly
Sta 130+29.02 - 170' LT

183 LF
Chain Link Fence
(Permanent)

Fence Terminal (Incidental)
Sta 131+22.00 - 48.17' LT

Exst R/W Not State Owned

Exst Interstate R/W

100'

Fence Terminal (Incidental)
Sta 126+42.00 - 48.17' RT

P.I. 126+36.29

125

126

127

128

129

130

131

132

64th Ave S

133

Section Line

33'

Fence Terminal (Incidental)
Sta 126+42.00 - 3.58' RT

Exst R/W Not State Owned

169 LF
Chain Link Fence
(Permanent)

Fence Terminal (Incidental)
Sta 131+22.00 - 3.58' RT

163 LF
Chain Link Fence
(Permanent)

100'

Exst R/W Not State Owned

Sec 10
T-138-N
R-49-W

Section Line

Corner Assembly
Sta 127+56.36 - 97' RT

Corner Assembly
Sta 126+97.06 - 120' RT

Corner Assembly
Connect to Existing
Sta 126+97.69 - 158' RT

Sec 11
T-138-N
R-49-W

Exst R/W Not State Owned

Exst Interstate R/W

Corner Assembly
Sta 130+11.11 - 90' RT

400 LF
Chain Link Fence
(For Winter Suspension)

Corner Assembly
Connect to Existing
Sta 130+83.25 - 160' RT

Corner Assembly
Sta 130+82.53 - 120' RT

Exst Interstate R/W

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64th Avenue South - 38th St S to 33rd St S

Fencing Layout

64th Avenue South

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PRELIMINARY SURVEY COORDINATE AND CURVE DATA - 64TH AVE - 33RD ST TO 38TH ST - FARGO, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	81	1

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Interstate 29 (CHAIN EX29)			
BEGIN Sec Line	3076+15.90	425592.20	2885715.75
1/4 Line	3102+64.75	428239.56	2885627.13
Station Equation I 29 (EX29) at 64th Ave S (EX64)			
Interstate 29	3129+13.92	430887.25	2885538.49
64th Ave S	128+82.26	430887.25	2885538.49
1/4 Line	3155+58.75	433530.60	2885450.00
END	3174+02.44	435373.26	2885388.32
64th Ave S (CHAIN EX64)			
BEGIN Rec Sec Cor	76+63.71	430693.55	2880023.65
Rec 1/4 Cor	100+00.00	430788.40	2882658.23
Rec Sec Cor	126+36.30	430883.20	2885292.83
Station Equation 64th Ave S (EX64) at I 29 (EX29)			
64th Ave S	128+82.00	430887.25	2885538.49
Interstate 29	3129+13.92	430887.25	2885538.49
Rec 1/4 Cor	152+29.39	430925.96	2887885.56
END Rec Sec Cor	178+23.15	430962.63	2890479.07

CURVE DATA

ARC DEFINITION

US PUBLIC LAND SURVEY DATA

DESC.	SEC-TWP-RGE	NORTHING	EASTING
SE Cor	Sec 2 T-138-N R-49-W	430962.63	2890479.07
NE Cor	Sec 2 T-138-N R-49-W	436226.16	2890397.95
N 1/4 Cor	Sec 2 T-138-N R-49-W	436135.92	2887754.70
S 1/4 Cor	Sec 2 T-138-N R-49-W	430925.96	2887885.56
NE Cor	Sec 3 T-138-N R-49-W	436052.71	2885109.62
NW Cor	Sec 3 T-138-N R-49-W	435867.12	2879825.91
N 1/4 Cor	Sec 3 T-138-N R-49-W	435956.34	2882469.03
SW Cor	Sec 3 T-138-N R-49-W	430693.55	2880023.65
SE Cor	Sec 3 T-138-N R-49-W	430883.20	2885292.83
E 1/4 Cor	Sec 3 T-138-N R-49-W	433527.40	2885199.76
S 1/4 Cor	Sec 3 T-138-N R-49-W	430788.40	2882658.23
E 1/4 Cor	Sec 4 T-138-N R-49-W	433384.58	2879920.76
NE Cor	Sec 8 T-138-N R-49-W	430463.81	2874753.88
N 1/4 Cor	Sec 9 T-138-N R-49-W	430578.62	2877388.70
W 1/4 Cor	Sec 10 T-138-N R-49-W	428046.34	2880102.83
SW Cor	Sec 10 T-138-N R-49-W	425399.19	2880182.00
S 1/4 Cor	Sec 10 T-138-N R-49-W	425493.85	2882832.14
SE Cor	Sec 10 T-138-N R-49-W	425588.43	2885482.21
E 1/4 Cor	Sec 10 T-138-N R-49-W	428235.80	2885387.55
SE Cor	Sec 11 T-138-N R-49-W	425672.29	2890688.65
E 1/4 Cor	Sec 11 T-138-N R-49-W	428317.48	2890583.87
S 1/4 Cor	Sec 11 T-138-N R-49-W	425630.45	2888085.47

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
CONTROL POINT DESCRIPTION					
PRIMARY CONTROL					
(Station and Offset derrived from Chain EX29)					
CP 1	436052.71	2885109.62	926.60	N/A	N/A
2" Alum Cap for Section Corner (NE Sec 3)					
CP 2	435489.62	2869565.87	913.30	N/A	N/A
NGS Marker DN4365 Survey Disk in Abutment of Bridge on Sheyenne					
GPS 51	428163.70	2884871.82	907.14	3102+14.20	757.43 Lt
#6 Rebar w/ Alum Cap stamped "Holy X"					

REFERENCE MARKERS

R Mkr #	NORTHING	EASTING	STATION	OFFSET
Interstate 29 (CHAIN EX29)				
59	429489.89	2885503.68	3119+50	82' LT
59	429493.48	2885663.19	3119+49	74' RT
60	434335.58	2885308.82	3168+00	114' LT
60	434338.86	2885503.26	3167+97	80' RT

NOTES:
Sheet 1 of 1
Control was developed from Static Network based on OPUS solutions.

Date Survey Completed 10/17/2018

☐ Assumed Coordinates

☒ All coordinates on this sheet are Cass County ground coordinates.
They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = 0.9998875

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID 09 ☐ _____
☒ GEOID 12B

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	2

Beginning chain EX29 description

==========

Point EX291 N 425,592.1972 E 2,885,715.7529 Sta 3076+15.90

Course from EX291 to EX293 N 1° 55' 02.47" W Dist 2,648.8499

Point EX293 N 428,239.5641 E 2,885,627.1280 Sta 3102+64.75

Course from EX293 to EX295 N 1° 55' 02.47" W Dist 2,649.1657

Point EX295 N 430,887.2466 E 2,885,538.4926 Sta 3129+13.92

Course from EX295 to EX297 N 1° 55' 02.47" W Dist 2,644.8327

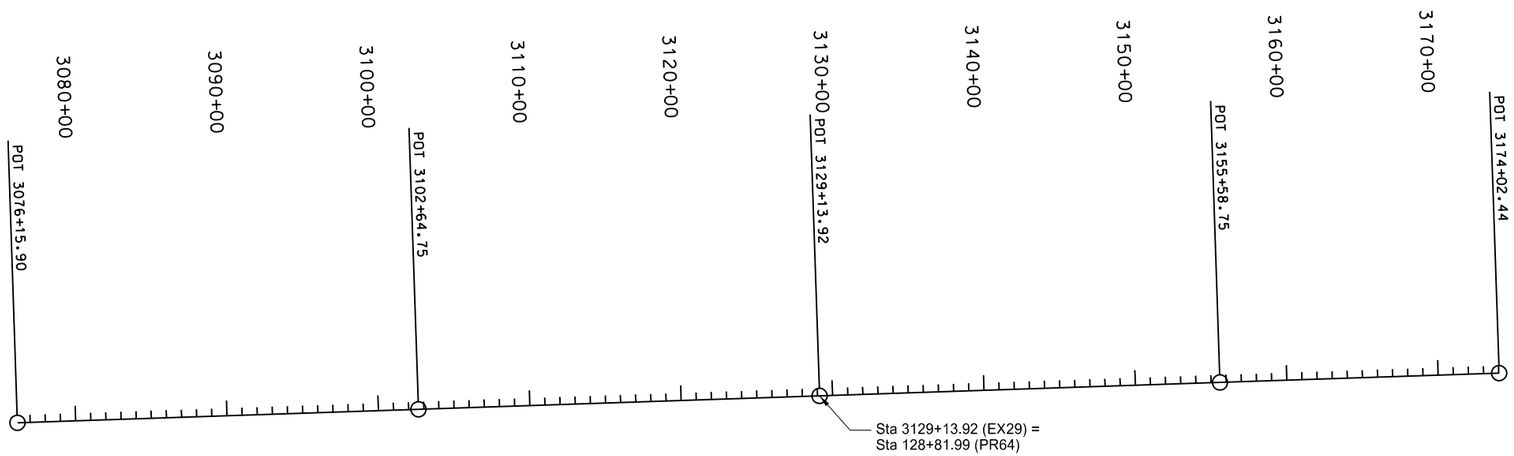
Point EX297 N 433,530.5985 E 2,885,450.0021 Sta 3155+58.75

Course from EX297 to EX298 N 1° 55' 02.47" W Dist 1,843.6947

Point EX298 N 435,373.2610 E 2,885,388.3160 Sta 3174+02.44

==========

Ending chain EX29 description



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64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

EX29
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	3

Beginning chain PR64 description

==========

Point PR641 N 430,578.6240 E 2,877,388.7010 Sta 47+26.25

Course from PR641 to PR643 N 87° 30' 09.63" E Dist 2,637.4529

Point PR643 N 430,693.5450 E 2,880,023.6490 Sta 73+63.70

Course from PR643 to PR645 N 87° 56' 16.72" E Dist 2,636.2871

Point PR645 N 430,788.4020 E 2,882,658.2290 Sta 99+99.99

Course from PR645 to PR647 N 87° 56' 21.78" E Dist 2,636.3018

Point PR647 N 430,883.1950 E 2,885,292.8260 Sta 126+36.29

Course from PR647 to PR649 N 89° 03' 18.54" E Dist 2,593.0896

Point PR649 N 430,925.9550 E 2,887,885.5630 Sta 152+29.38

Course from PR649 to PR6411 N 87° 41' 23.23" E Dist 1,012.3411

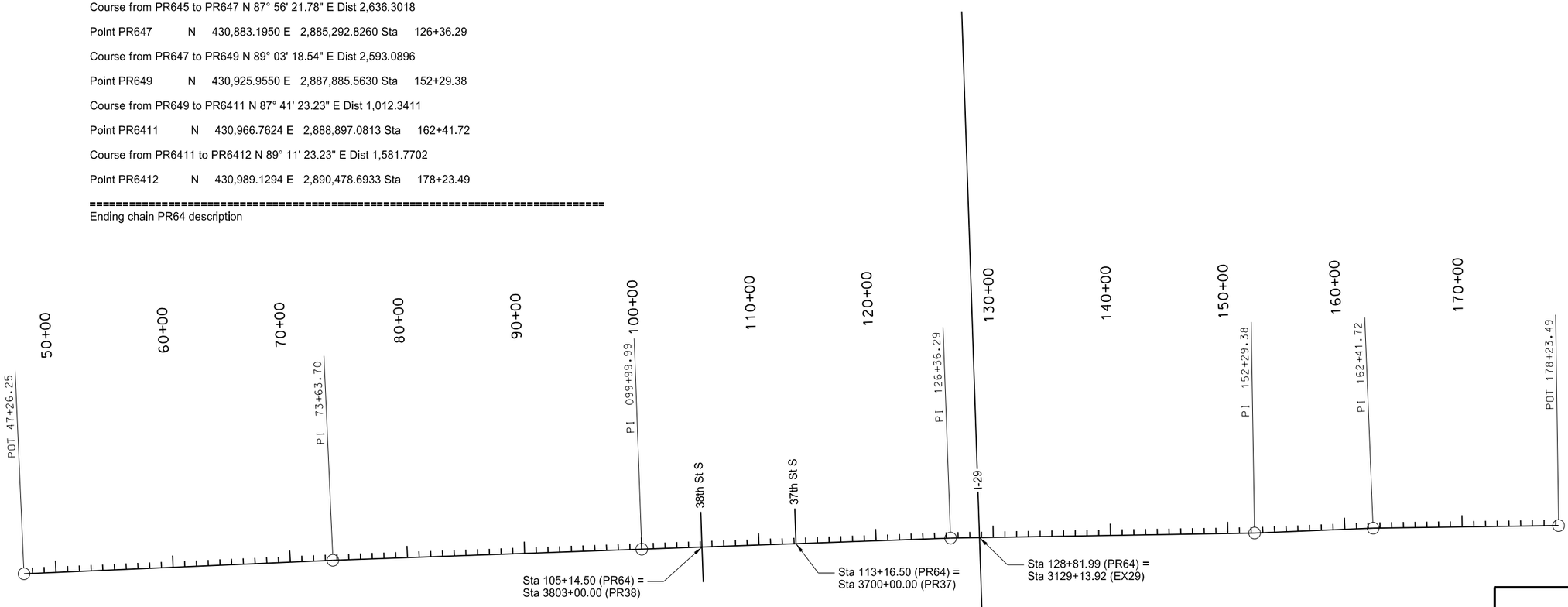
Point PR6411 N 430,966.7624 E 2,888,897.0813 Sta 162+41.72

Course from PR6411 to PR6412 N 89° 11' 23.23" E Dist 1,581.7702

Point PR6412 N 430,989.1294 E 2,890,478.6933 Sta 178+23.49

==========

Ending chain PR64 description



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64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR64
64th Avenue South

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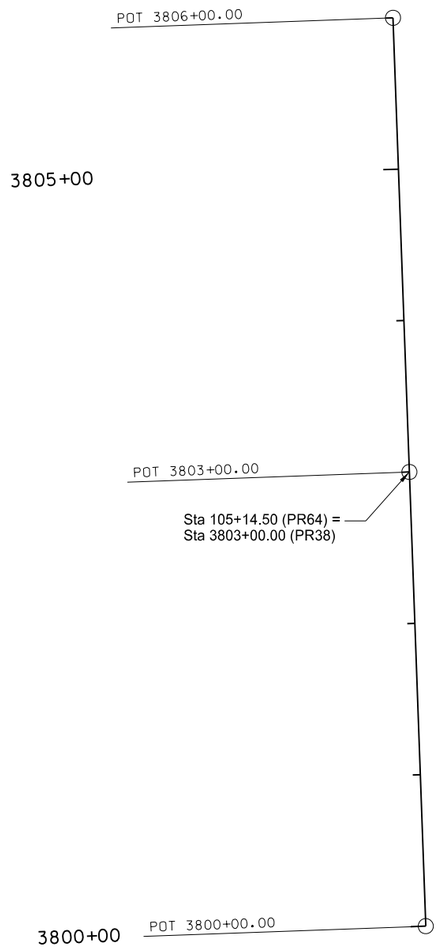
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	4



Beginning chain PR38 description

==========

Point PR381 N 430,507.0961 E 2,883,183.1933 Sta 3800+00.00

Course from PR381 to PR383 N 2° 03' 38.22" W Dist 300.0000

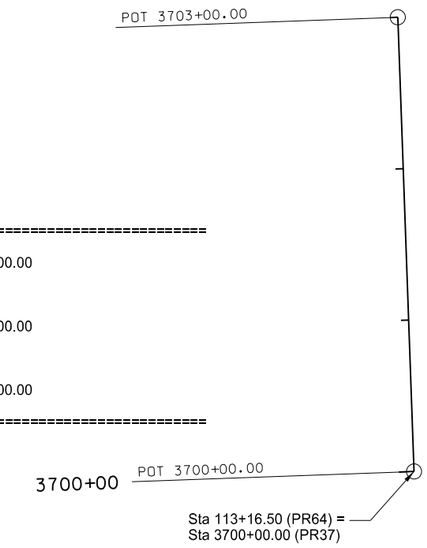
Point PR383 N 430,806.9021 E 2,883,172.4063 Sta 3803+00.00

Course from PR383 to PR384 N 2° 03' 38.22" W Dist 300.0000

Point PR384 N 431,106.7081 E 2,883,161.6193 Sta 3806+00.00

==========

Ending chain PR38 description



Beginning chain PR37 description

==========

Point PR371 N 430,835.7395 E 2,883,973.8877 Sta 3700+00.00

Course from PR371 to PR372 N 2° 03' 38.22" W Dist 300.0000

Point PR372 N 431,135.5455 E 2,883,963.1006 Sta 3703+00.00

==========

Ending chain PR37 description

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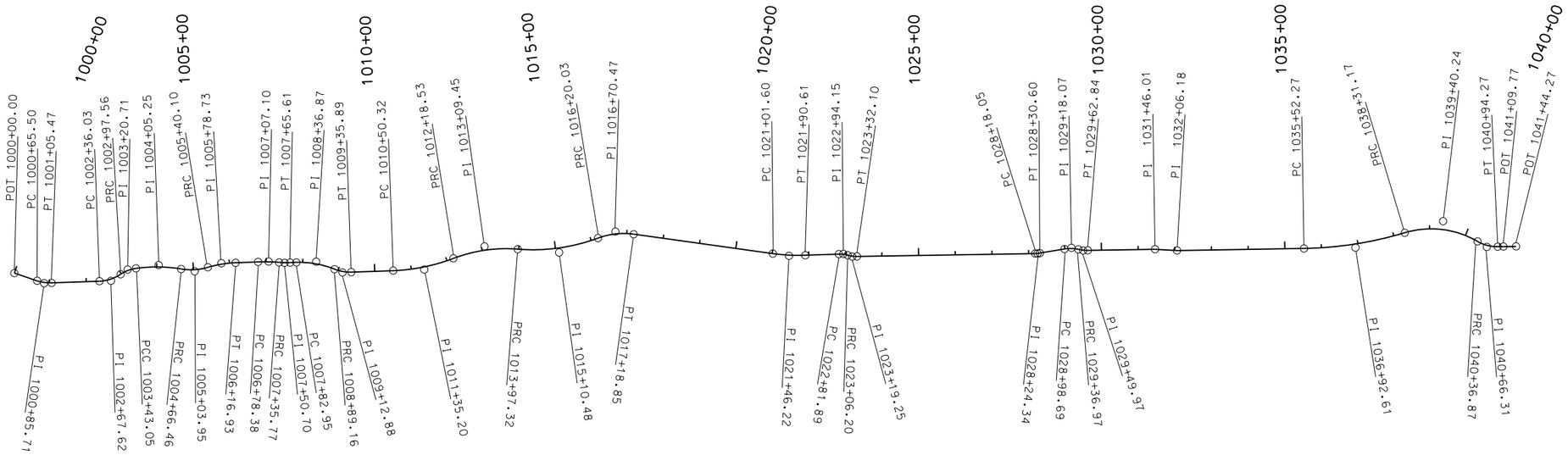
64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR38 & PR37
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	5



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64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR_PATH_L
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	6

Beginning chain PR_PATH_L description
==========

Point 5573 N 430,874.1526 E 2,882,998.2748 Sta 1000+00.00

Course from 5573 to PC PR_PATH_L_3 S 71° 14' 14.66" E Dist 65.4968

Curve Data

Curve PR_PATH_L_3
P.I. Station 1000+85.71 N 430,846.5846 E 2,883,079.4288
Delta = 20° 49' 23.57" (LT)
Degree = 52° 05' 13.46"
Tangent = 20.2118
Length = 39.9777
Radius = 110.0000
External = 1.8415
Long Chord = 39.7580
Mid. Ord. = 1.8112
P.C. Station 1000+65.50 N 430,853.0857 E 2,883,060.2911
P.T. Station 1001+05.47 N 430,847.3114 E 2,883,099.6276
C.C. N 430,957.2402 E 2,883,095.6723
Back = S 71° 14' 14.66" E
Ahead = N 87° 56' 21.78" E
Chord Bear = S 81° 38' 56.44" E

Course from PT PR_PATH_L_3 to PC PR_PATH_L_6 N 87° 56' 21.78" E Dist 130.5574

Curve Data

Curve PR_PATH_L_6
P.I. Station 1002+67.62 N 430,853.1417 E 2,883,261.6702
Delta = 32° 02' 46.89" (LT)
Degree = 52° 05' 13.46"
Tangent = 31.5902
Length = 61.5246
Radius = 110.0000
External = 4.4462
Long Chord = 60.7258
Mid. Ord. = 4.2735
P.C. Station 1002+36.03 N 430,852.0058 E 2,883,230.1005
P.T. Station 1002+97.56 N 430,870.8555 E 2,883,287.8266
C.C. N 430,961.9347 E 2,883,226.1453
Back = N 87° 56' 21.78" E
Ahead = N 55° 53' 34.88" E
Chord Bear = N 71° 54' 58.33" E

Curve Data

Curve PR_PATH_L_7
P.I. Station 1003+20.71 N 430,883.8360 E 2,883,306.9936
Delta = 26° 04' 02.53" (RT)
Degree = 57° 17' 44.81"
Tangent = 23.1488
Length = 45.4961
Radius = 100.0000
External = 2.6444
Long Chord = 45.1048
Mid. Ord. = 2.5762
P.C. Station 1002+97.56 N 430,870.8555 E 2,883,287.8266
P.T. Station 1003+43.05 N 430,887.0735 E 2,883,329.9149
C.C. N 430,788.0563 E 2,883,343.9006
Back = N 55° 53' 34.88" E
Ahead = N 81° 57' 37.41" E
Chord Bear = N 68° 55' 36.15" E

Curve Data

Curve PR_PATH_L_8
P.I. Station 1004+05.25 N 430,895.7726 E 2,883,391.5033
Delta = 17° 40' 38.42" (RT)
Degree = 14° 19' 26.20"
Tangent = 62.1997
Length = 123.4111
Radius = 400.0000
External = 4.8071
Long Chord = 122.9222
Mid. Ord. = 4.7500
P.C. Station 1003+43.05 N 430,887.0735 E 2,883,329.9149
P.T. Station 1004+66.46 N 430,885.3593 E 2,883,452.8251
C.C. N 430,491.0049 E 2,883,385.8579
Back = N 81° 57' 37.41" E
Ahead = S 80° 21' 44.17" E
Chord Bear = S 89° 12' 03.38" E

Curve Data

Curve PR_PATH_L_9
P.I. Station 1005+03.95 N 430,879.0837 E 2,883,489.7802
Delta = 26° 22' 13.53" (LT)
Degree = 35° 48' 35.50"
Tangent = 37.4841
Length = 73.6401
Radius = 160.0000
External = 4.3322
Long Chord = 72.9919
Mid. Ord. = 4.2180
P.C. Station 1004+66.46 N 430,885.3593 E 2,883,452.8251
P.T. Station 1005+40.10 N 430,889.8757 E 2,883,525.6771
C.C. N 431,043.1010 E 2,883,479.6120
Back = S 80° 21' 44.17" E
Ahead = N 73° 16' 02.30" E
Chord Bear = N 86° 27' 09.06" E

Curve Data

Curve PR_PATH_L_10
P.I. Station 1005+78.73 N 430,900.9954 E 2,883,562.6645
Delta = 14° 40' 19.48" (RT)
Degree = 19° 05' 54.94"
Tangent = 38.6227
Length = 76.8228
Radius = 300.0000
External = 2.4760
Long Chord = 76.6131
Mid. Ord. = 2.4557
P.C. Station 1005+40.10 N 430,889.8757 E 2,883,525.6771
P.T. Station 1006+16.93 N 430,902.3842 E 2,883,601.2622
C.C. N 430,602.5782 E 2,883,612.0492
Back = N 73° 16' 02.30" E
Ahead = N 87° 56' 21.78" E
Chord Bear = N 80° 36' 12.04" E

Course from PT PR_PATH_L_10 to PC PR_PATH_L_13 N 87° 56' 21.78" E Dist 61.4537

Curve Data

Curve PR_PATH_L_13
P.I. Station 1007+07.10 N 430,905.6267 E 2,883,691.3819
Delta = 6° 34' 33.19" (RT)
Degree = 11° 27' 32.96"
Tangent = 28.7242
Length = 57.3854
Radius = 500.0000
External = 0.8244
Long Chord = 57.3539
Mid. Ord. = 0.8230
P.C. Station 1006+78.38 N 430,904.5939 E 2,883,662.6762
P.T. Station 1007+35.77 N 430,903.3654 E 2,883,720.0170
C.C. N 430,404.9172 E 2,883,680.6546
Back = N 87° 56' 21.78" E
Ahead = S 85° 29' 05.04" E
Chord Bear = S 88° 46' 21.63" E

Curve Data

Curve PR_PATH_L_14
P.I. Station 1007+50.70 N 430,902.1895 E 2,883,734.9072
Delta = 6° 34' 33.19" (LT)
Degree = 22° 02' 12.62"
Tangent = 14.9366
Length = 29.8404
Radius = 260.0000
External = 0.4287
Long Chord = 29.8240
Mid. Ord. = 0.4280
P.C. Station 1007+35.77 N 430,903.3654 E 2,883,720.0170
P.T. Station 1007+65.61 N 430,902.7266 E 2,883,749.8342
C.C. N 431,162.5584 E 2,883,740.4854
Back = S 85° 29' 05.04" E
Ahead = N 87° 56' 21.78" E
Chord Bear = S 88° 46' 21.63" E

Course from PT PR_PATH_L_14 to PC PR_PATH_L_17 N 87° 56' 21.78" E Dist 17.3434

Curve Data

Curve PR_PATH_L_17
P.I. Station 1008+36.87 N 430,905.2888 E 2,883,821.0479
Delta = 24° 20' 26.33" (RT)
Degree = 22° 55' 05.92"
Tangent = 53.9164
Length = 106.2061
Radius = 250.0000
External = 5.7479
Long Chord = 105.4093
Mid. Ord. = 5.6187
P.C. Station 1007+82.95 N 430,903.3502 E 2,883,767.1664
P.T. Station 1008+89.16 N 430,884.8473 E 2,883,870.9390
C.C. N 430,653.5118 E 2,883,776.1556
Back = N 87° 56' 21.78" E
Ahead = S 67° 43' 11.90" E
Chord Bear = S 79° 53' 25.06" E

Curve Data

Curve PR_PATH_L_18
P.I. Station 1009+12.88 N 430,875.8531 E 2,883,892.8911
Delta = 24° 20' 26.33" (LT)
Degree = 52° 05' 13.46"
Tangent = 23.7232
Length = 46.7307
Radius = 110.0000
External = 2.5291
Long Chord = 46.3801
Mid. Ord. = 2.4722
P.C. Station 1008+89.16 N 430,884.8473 E 2,883,870.9390
P.T. Station 1009+35.89 N 430,876.7061 E 2,883,916.5989
C.C. N 430,986.6349 E 2,883,912.6437
Back = S 67° 43' 11.90" E
Ahead = N 87° 56' 21.78" E
Chord Bear = S 79° 53' 25.06" E

Course from PT PR_PATH_L_18 to PC PR_PATH_L_21 N 87° 56' 21.78" E Dist 114.4333

Curve Data

Curve PR_PATH_L_21
P.I. Station 1011+35.20 N 430,883.8726 E 2,884,115.7799
Delta = 18° 53' 51.57" (LT)
Degree = 11° 14' 04.08"
Tangent = 84.8766
Length = 168.2115
Radius = 510.0000
External = 7.0145
Long Chord = 167.4500
Mid. Ord. = 6.9194
P.C. Station 1010+50.32 N 430,880.8207 E 2,884,030.9582
P.T. Station 1012+18.53 N 430,914.2319 E 2,884,195.0412
C.C. N 431,390.4909 E 2,884,012.6203
Back = N 87° 56' 21.78" E
Ahead = N 69° 02' 30.20" E
Chord Bear = N 78° 29' 25.99" E

Curve Data

Curve PR_PATH_L_22
P.I. Station 1013+09.45 N 430,946.7513 E 2,884,279.9418
Delta = 25° 36' 37.01" (RT)
Degree = 14° 19' 26.20"
Tangent = 90.9155
Length = 178.7935
Radius = 400.0000
External = 10.2019
Long Chord = 177.3088
Mid. Ord. = 9.9482
P.C. Station 1012+18.53 N 430,914.2319 E 2,884,195.0412
P.T. Station 1013+97.32 N 430,939.3778 E 2,884,370.5578
C.C. N 430,540.6955 E 2,884,338.1164
Back = N 69° 02' 30.20" E
Ahead = S 85° 20' 52.79" E
Chord Bear = N 81° 50' 48.71" E

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64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR_PATH_L
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	7

Curve Data

Curve PR_PATH_L_23
P.I. Station 1015+10.48 N 430,930.2002 E 2,884,483.3441
Delta = 25° 01' 13.13" (LT)
Degree = 11° 14' 04.08"
Tangent = 113.1591
Length = 222.7103
Radius = 510.0000
External = 12.4031
Long Chord = 220.9449
Mid. Ord. = 12.1086
P.C. Station 1013+97.32 N 430,939.3778 E 2,884,370.5578
P.T. Station 1016+20.03 N 430,969.5856 E 2,884,589.4280
C.C. N 431,447.6977 E 2,884,411.9206
Back = S 85° 20' 52.79" E
Ahead = N 69° 37' 54.08" E
Chord Bear = N 82° 08' 30.65" E

Curve Data

Curve PR_PATH_L_24
P.I. Station 1016+70.47 N 430,987.1402 E 2,884,636.7108
Delta = 28° 18' 27.65" (RT)
Degree = 28° 38' 52.40"
Tangent = 50.4364
Length = 98.8124
Radius = 200.0000
External = 6.2616
Long Chord = 97.8105
Mid. Ord. = 6.0715
P.C. Station 1016+20.03 N 430,969.5856 E 2,884,589.4280
P.T. Station 1017+18.85 N 430,980.1736 E 2,884,686.6637
C.C. N 430,782.0907 E 2,884,659.0387
Back = N 69° 37' 54.08" E
Ahead = S 82° 03' 38.26" E
Chord Bear = N 83° 47' 07.91" E

Course from PT PR_PATH_L_24 to PC PR_PATH_L_27 S 82° 03' 38.26" E Dist 382.7487

Curve Data

Curve PR_PATH_L_27
P.I. Station 1021+46.22 N 430,921.1434 E 2,885,109.9351
Delta = 9° 59' 59.96" (LT)
Degree = 11° 14' 04.08"
Tangent = 44.6192
Length = 89.0117
Radius = 510.0000
External = 1.9481
Long Chord = 88.8988
Mid. Ord. = 1.9407
P.C. Station 1021+01.60 N 430,927.3064 E 2,885,065.7437
P.T. Station 1021+90.61 N 430,922.7477 E 2,885,154.5255
C.C. N 431,432.4179 E 2,885,136.1875
Back = S 82° 03' 38.26" E
Ahead = N 87° 56' 21.78" E
Chord Bear = S 87° 03' 38.24" E

Course from PT PR_PATH_L_27 to PC PR_PATH_L_30 N 87° 56' 21.78" E Dist 91.2819

Curve Data

Curve PR_PATH_L_30
P.I. Station 1022+94.15 N 430,926.4709 E 2,885,258.0041
Delta = 18° 34' 23.77" (RT)
Degree = 76° 23' 39.74"
Tangent = 12.2638
Length = 24.3124
Radius = 75.0000
External = 0.9961
Long Chord = 24.2060
Mid. Ord. = 0.9830
P.C. Station 1022+81.89 N 430,926.0299 E 2,885,245.7483
P.T. Station 1023+06.20 N 430,922.9852 E 2,885,269.7621
C.C. N 430,851.0784 E 2,885,248.4451
Back = N 87° 56' 21.78" E
Ahead = S 73° 29' 14.45" E
Chord Bear = S 82° 46' 26.34" E

Curve Data

Curve PR_PATH_L_31
P.I. Station 1023+19.25 N 430,919.2759 E 2,885,282.2743
Delta = 17° 27' 27.00" (LT)
Degree = 67° 24' 24.48"
Tangent = 13.0505
Length = 25.8987
Radius = 85.0000
External = 0.9960
Long Chord = 25.7987
Mid. Ord. = 0.9845
P.C. Station 1023+06.20 N 430,922.9852 E 2,885,269.7621
P.T. Station 1023+32.10 N 430,919.4911 E 2,885,295.3230
C.C. N 431,004.4796 E 2,885,293.9214
Back = S 73° 29' 14.45" E
Ahead = N 89° 03' 18.54" E
Chord Bear = S 82° 12' 57.96" E

Course from PT PR_PATH_L_31 to PC PR_PATH_L_34 N 89° 03' 18.54" E Dist 485.9511

Curve Data

Curve PR_PATH_L_34
P.I. Station 1028+24.34 N 430,927.6081 E 2,885,787.4938
Delta = 8° 27' 35.09" (LT)
Degree = 67° 24' 24.48"
Tangent = 6.2866
Length = 12.5503
Radius = 85.0000
External = 0.2322
Long Chord = 12.5389
Mid. Ord. = 0.2315
P.C. Station 1028+18.05 N 430,927.5044 E 2,885,781.2081
P.T. Station 1028+30.60 N 430,928.6354 E 2,885,793.6959
C.C. N 431,012.4929 E 2,885,779.8065
Back = N 89° 03' 18.54" E
Ahead = N 80° 35' 43.46" E
Chord Bear = N 84° 49' 31.00" E

Course from PT PR_PATH_L_34 to PC PR_PATH_L_37 N 80° 35' 43.46" E Dist 68.0902

Curve Data

Curve PR_PATH_L_37
P.I. Station 1029+18.07 N 430,942.9281 E 2,885,879.9885
Delta = 21° 56' 01.89" (RT)
Degree = 57° 17' 44.81"
Tangent = 19.3781
Length = 38.2818
Radius = 100.0000
External = 1.8603
Long Chord = 38.0485
Mid. Ord. = 1.8263
P.C. Station 1028+98.69 N 430,939.7616 E 2,885,860.8709
P.T. Station 1029+36.97 N 430,938.7243 E 2,885,898.9052
C.C. N 430,841.1057 E 2,885,877.2114
Back = N 80° 35' 43.46" E
Ahead = S 77° 28' 14.65" E
Chord Bear = S 88° 26' 15.60" E

Curve Data

Curve PR_PATH_L_38
P.I. Station 1029+49.97 N 430,935.9053 E 2,885,911.5900
Delta = 13° 28' 27.02" (LT)
Degree = 52° 05' 13.46"
Tangent = 12.9942
Length = 25.8686
Radius = 110.0000
External = 0.7648
Long Chord = 25.8090
Mid. Ord. = 0.7596
P.C. Station 1029+36.97 N 430,938.7243 E 2,885,898.9052
P.T. Station 1029+62.84 N 430,936.1196 E 2,885,924.5824
C.C. N 431,046.1047 E 2,885,922.7684
Back = S 77° 28' 14.65" E
Ahead = N 89° 03' 18.32" E
Chord Bear = S 84° 12' 28.16" E

Course from PT PR_PATH_L_38 to 5574 N 89° 03' 18.32" E Dist 183.1674

Point 5574 N 430,939.1402 E 2,886,107.7249 Sta 1031+46.01

Course from 5574 to 5575 S 86° 39' 20.55" E Dist 60.1682

Point 5575 N 430,935.6303 E 2,886,167.7906 Sta 1032+06.18

Course from 5575 to PC PR_PATH_L_45 N 89° 03' 18.54" E Dist 346.0874

Curve Data

Curve PR_PATH_L_45
P.I. Station 1036+92.61 N 430,943.6515 E 2,886,654.1569
Delta = 15° 49' 18.50" (LT)
Degree = 5° 40' 22.26"
Tangent = 140.3450
Length = 278.9040
Radius = 1,010.0000
External = 9.7042
Long Chord = 278.0187
Mid. Ord. = 9.6119
P.C. Station 1035+52.27 N 430,941.3373 E 2,886,513.8310
P.T. Station 1038+31.17 N 430,984.1375 E 2,886,788.5354
C.C. N 431,951.1999 E 2,886,497.1761
Back = N 89° 03' 18.54" E
Ahead = N 73° 14' 00.04" E
Chord Bear = N 81° 08' 39.29" E

Curve Data

Curve PR_PATH_L_46
P.I. Station 1039+40.24 N 431,015.6028 E 2,886,892.9732
Delta = 47° 08' 35.50" (RT)
Degree = 22° 55' 05.92"
Tangent = 109.0748
Length = 205.7010
Radius = 250.0000
External = 22.7587
Long Chord = 199.9474
Mid. Ord. = 20.8597
P.C. Station 1038+31.17 N 430,984.1375 E 2,886,788.5354
P.T. Station 1040+36.87 N 430,960.4458 E 2,886,987.0742
C.C. N 430,744.7656 E 2,886,860.6541
Back = N 73° 14' 00.04" E
Ahead = S 59° 37' 24.46" E
Chord Bear = S 83° 11' 42.21" E

Curve Data

Curve PR_PATH_L_47
P.I. Station 1040+66.31 N 430,945.5604 E 2,887,012.4697
Delta = 31° 19' 17.00" (LT)
Degree = 54° 34' 02.67"
Tangent = 29.4365
Length = 57.3994
Radius = 105.0000
External = 4.0482
Long Chord = 56.6874
Mid. Ord. = 3.8979
P.C. Station 1040+36.87 N 430,960.4458 E 2,886,987.0742
P.T. Station 1040+94.27 N 430,946.0458 E 2,887,041.9021
C.C. N 431,051.0315 E 2,887,040.1707
Back = S 59° 37' 24.46" E
Ahead = N 89° 03' 18.54" E
Chord Bear = S 75° 17' 02.96" E

Course from PT PR_PATH_L_47 to 5576 N 89° 03' 18.54" E Dist 15.4991

Point 5576 N 430,946.3014 E 2,887,057.3991 Sta 1041+09.77

Course from 5576 to 5577 N 89° 03' 18.54" E Dist 34.5009

Point 5577 N 430,946.8703 E 2,887,091.8953 Sta 1041+44.27

==========
Ending chain PR_PATH_L description

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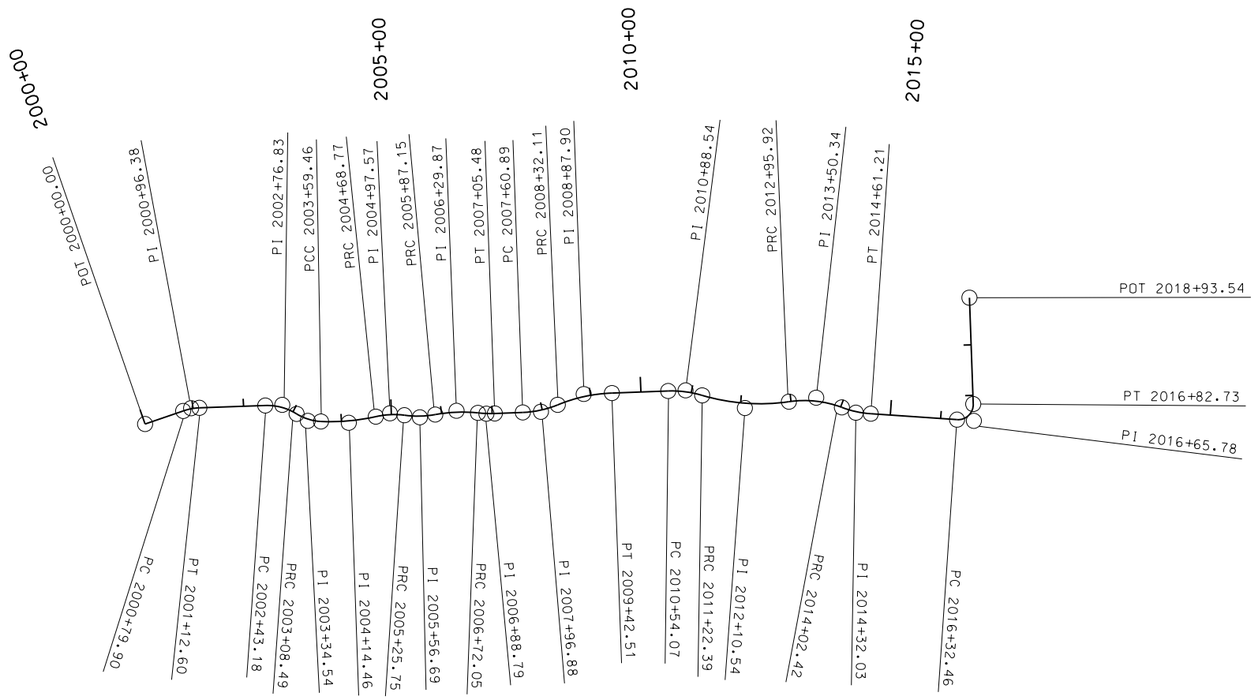
64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR_PATH_L
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	81	8



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64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR_PATH_R
64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	81	9

Beginning chain PR_PATH_R description

Point 5746 N 430,729.2511 E 2,882,995.1858 Sta 2000+00.00

Course from 5746 to PC PR_PATH_R_3 N 70° 54' 27.43" E Dist 79.9045

Curve Data

Curve PR_PATH_R_3
P.I. Station 2000+96.38 N 430,760.7748 E 2,883,086.2597
Delta = 17° 01' 54.35" (RT)
Degree = 52° 05' 13.46"
Tangent = 16.4708
Length = 32.6986
Radius = 110.0000
External = 1.2263
Long Chord = 32.5784
Mid. Ord. = 1.2128
P.C. Station 2000+79.90 N 430,755.3873 E 2,883,070.6950
P.T. Station 2001+12.60 N 430,761.3670 E 2,883,102.7198
C.C. N 430,651.4381 E 2,883,106.6751
Back = N 70° 54' 27.43" E
Ahead = N 87° 56' 21.78" E
Chord Bear = N 79° 25' 24.60" E

Course from PT PR_PATH_R_3 to PC PR_PATH_R_6 N 87° 56' 21.78" E Dist 130.5721

Curve Data

Curve PR_PATH_R_6
P.I. Station 2002+76.83 N 430,767.2719 E 2,883,266.8366
Delta = 34° 01' 10.24" (RT)
Degree = 52° 05' 13.46"
Tangent = 33.6509
Length = 65.3128
Radius = 110.0000
External = 5.0321
Long Chord = 64.3576
Mid. Ord. = 4.8120
P.C. Station 2002+43.18 N 430,766.0619 E 2,883,233.2075
P.T. Station 2003+08.49 N 430,749.4602 E 2,883,295.3869
C.C. N 430,656.1331 E 2,883,237.1627
Back = N 87° 56' 21.78" E
Ahead = S 58° 02' 27.99" E
Chord Bear = S 75° 03' 03.10" E

Curve Data

Curve PR_PATH_R_7
P.I. Station 2003+34.54 N 430,735.6695 E 2,883,317.4919
Delta = 29° 12' 23.05" (LT)
Degree = 57° 17' 44.81"
Tangent = 26.0540
Length = 50.9748
Radius = 100.0000
External = 3.3383
Long Chord = 50.4247
Mid. Ord. = 3.2305
P.C. Station 2003+08.49 N 430,749.4602 E 2,883,295.3869
P.T. Station 2003+59.46 N 430,734.4183 E 2,883,343.5158
C.C. N 430,834.3030 E 2,883,348.3180
Back = S 58° 02' 27.99" E
Ahead = S 87° 14' 51.04" E
Chord Bear = S 72° 38' 39.51" E

Curve Data

Curve PR_PATH_R_8
P.I. Station 2004+14.46 N 430,731.7773 E 2,883,398.4489
Delta = 15° 39' 25.81" (LT)
Degree = 14° 19' 26.20"
Tangent = 54.9965
Length = 109.3077
Radius = 400.0000
External = 3.7631
Long Chord = 108.9679
Mid. Ord. = 3.7280
P.C. Station 2003+59.46 N 430,734.4183 E 2,883,343.5158
P.T. Station 2004+68.77 N 430,744.0597 E 2,883,452.0563
C.C. N 431,133.9569 E 2,883,362.7244
Back = S 87° 14' 51.04" E
Ahead = N 77° 05' 43.15" E
Chord Bear = N 84° 55' 26.06" E

Curve Data

Curve PR_PATH_R_9
P.I. Station 2004+97.57 N 430,750.4905 E 2,883,480.1240
Delta = 20° 24' 16.01" (RT)
Degree = 35° 48' 35.50"
Tangent = 28.7950
Length = 56.9800
Radius = 160.0000
External = 2.5704
Long Chord = 56.6793
Mid. Ord. = 2.5298
P.C. Station 2004+68.77 N 430,744.0597 E 2,883,452.0563
P.T. Station 2005+25.75 N 430,746.7321 E 2,883,508.6726
C.C. N 430,588.1008 E 2,883,487.7891
Back = N 77° 05' 43.15" E
Ahead = S 82° 30' 00.84" E
Chord Bear = N 87° 17' 51.15" E

Curve Data

Curve PR_PATH_R_10
P.I. Station 2005+56.69 N 430,742.6932 E 2,883,539.3516
Delta = 17° 35' 23.88" (LT)
Degree = 28° 38' 52.40"
Tangent = 30.9437
Length = 61.4006
Radius = 200.0000
External = 2.3796
Long Chord = 61.1597
Mid. Ord. = 2.3516
P.C. Station 2005+25.75 N 430,746.7321 E 2,883,508.6726
P.T. Station 2005+87.15 N 430,748.1145 E 2,883,569.8167
C.C. N 430,945.0212 E 2,883,534.7771
Back = S 82° 30' 00.84" E
Ahead = N 79° 54' 35.28" E
Chord Bear = N 88° 42' 17.22" E

Curve Data

Curve PR_PATH_R_11
P.I. Station 2006+29.87 N 430,755.5986 E 2,883,611.8737
Delta = 15° 41' 30.34" (RT)
Degree = 18° 28' 57.03"
Tangent = 42.7176
Length = 84.9006
Radius = 310.0000
External = 2.9294
Long Chord = 84.6355
Mid. Ord. = 2.9020
P.C. Station 2005+87.15 N 430,748.1145 E 2,883,569.8167
P.T. Station 2006+72.05 N 430,751.4289 E 2,883,654.3873
C.C. N 430,442.9092 E 2,883,624.1282
Back = N 79° 54' 35.28" E
Ahead = S 84° 23' 54.38" E
Chord Bear = N 87° 45' 20.45" E

Curve Data

Curve PR_PATH_R_12
P.I. Station 2006+88.79 N 430,749.7948 E 2,883,671.0486
Delta = 7° 39' 43.84" (LT)
Degree = 22° 55' 05.92"
Tangent = 16.7412
Length = 33.4326
Radius = 250.0000
External = 0.5599
Long Chord = 33.4077
Mid. Ord. = 0.5587
P.C. Station 2006+72.05 N 430,751.4289 E 2,883,654.3873
P.T. Station 2007+05.48 N 430,750.3968 E 2,883,687.7790
C.C. N 431,000.2351 E 2,883,678.7898
Back = S 84° 23' 54.38" E
Ahead = N 87° 56' 21.78" E
Chord Bear = S 88° 13' 46.30" E

Course from PT PR_PATH_R_12 to PC PR_PATH_R_15 N 87° 56' 21.78" E Dist 55.4047

Curve Data

Curve PR_PATH_R_15
P.I. Station 2007+96.88 N 430,753.6832 E 2,883,779.1183
Delta = 20° 24' 16.03" (LT)
Degree = 28° 38' 52.40"
Tangent = 35.9937
Length = 71.2250
Radius = 200.0000
External = 3.2131
Long Chord = 70.8492
Mid. Ord. = 3.1623
P.C. Station 2007+60.89 N 430,752.3889 E 2,883,743.1479
P.T. Station 2008+32.11 N 430,767.4371 E 2,883,812.3806
C.C. N 430,952.2596 E 2,883,735.9566
Back = N 87° 56' 21.78" E
Ahead = N 67° 32' 05.75" E
Chord Bear = N 77° 44' 13.76" E

Curve Data

Curve PR_PATH_R_16
P.I. Station 2008+87.90 N 430,788.7556 E 2,883,863.9370
Delta = 20° 24' 16.03" (RT)
Degree = 18° 28' 57.03"
Tangent = 55.7902
Length = 110.3987
Radius = 310.0000
External = 4.9802
Long Chord = 109.8162
Mid. Ord. = 4.9015
P.C. Station 2008+32.11 N 430,767.4371 E 2,883,812.3806
P.T. Station 2009+42.51 N 430,790.7617 E 2,883,919.6912
C.C. N 430,480.9621 E 2,883,930.8378
Back = N 67° 32' 05.75" E
Ahead = N 87° 56' 21.78" E
Chord Bear = N 77° 44' 13.76" E

Course from PT PR_PATH_R_16 to PC PR_PATH_R_19 N 87° 56' 21.78" E Dist 111.5574

Curve Data

Curve PR_PATH_R_19
P.I. Station 2010+88.54 N 430,796.0122 E 2,884,065.6198
Delta = 18° 38' 26.92" (RT)
Degree = 27° 17' 01.34"
Tangent = 34.4656
Length = 68.3221
Radius = 210.0000
External = 2.8095
Long Chord = 68.0212
Mid. Ord. = 2.7724
P.C. Station 2010+54.07 N 430,794.7729 E 2,884,031.1764
P.T. Station 2011+22.39 N 430,786.1772 E 2,884,098.6524
C.C. N 430,584.9087 E 2,884,038.7274
Back = N 87° 56' 21.78" E
Ahead = S 73° 25' 11.31" E
Chord Bear = S 82° 44' 24.76" E

Curve Data

Curve PR_PATH_R_20
P.I. Station 2012+10.54 N 430,761.0232 E 2,884,183.1364
Delta = 24° 51' 20.13" (LT)
Degree = 14° 19' 26.20"
Tangent = 88.1492
Length = 173.5248
Radius = 400.0000
External = 9.5977
Long Chord = 172.1673
Mid. Ord. = 9.3728
P.C. Station 2011+22.39 N 430,786.1772 E 2,884,098.6524
P.T. Station 2012+95.92 N 430,773.7106 E 2,884,270.3677
C.C. N 431,169.5457 E 2,884,212.7952
Back = S 73° 25' 11.31" E
Ahead = N 81° 43' 28.57" E
Chord Bear = S 85° 50' 51.37" E

Curve Data

Curve PR_PATH_R_21
P.I. Station 2013+50.34 N 430,781.5437 E 2,884,324.2236
Delta = 29° 03' 27.79" (RT)
Degree = 27° 17' 01.34"
Tangent = 54.4226
Length = 106.5021
Radius = 210.0000
External = 6.9374
Long Chord = 105.3644
Mid. Ord. = 6.7155
P.C. Station 2012+95.92 N 430,773.7106 E 2,884,270.3677
P.T. Station 2014+02.42 N 430,762.2336 E 2,884,375.1052
C.C. N 430,565.8972 E 2,884,300.5933
Back = N 81° 43' 28.57" E
Ahead = S 69° 13' 03.64" E
Chord Bear = S 83° 44' 47.54" E

Curve Data

Curve PR_PATH_R_22
P.I. Station 2014+32.03 N 430,751.7274 E 2,884,402.7886
Delta = 16° 50' 34.58" (LT)
Degree = 28° 38' 52.40"
Tangent = 29.6100
Length = 58.7929
Radius = 200.0000
External = 2.1800
Long Chord = 58.5815
Mid. Ord. = 2.1565
P.C. Station 2014+02.42 N 430,762.2336 E 2,884,375.1052
P.T. Station 2014+61.21 N 430,749.6932 E 2,884,432.3286
C.C. N 430,949.2207 E 2,884,446.0689
Back = S 69° 13' 03.64" E
Ahead = S 86° 03' 38.22" E
Chord Bear = S 77° 38' 20.93" E

Course from PT PR_PATH_R_22 to PC PR_PATH_R_25 S 86° 03' 38.22" E Dist 171.2517

Curve Data

Curve PR_PATH_R_25
P.I. Station 2016+65.78 N 430,735.6390 E 2,884,636.4154
Delta = 96° 00' 00.00" (LT)
Degree = 190° 59' 09.35"
Tangent = 33.3184
Length = 50.2655
Radius = 30.0000
External = 14.8343
Long Chord = 44.5887
Mid. Ord. = 9.9261
P.C. Station 2016+32.46 N 430,737.9280 E 2,884,603.1757
P.T. Station 2016+82.73 N 430,768.9358 E 2,884,635.2174
C.C. N 430,767.8571 E 2,884,605.2368
Back = S 86° 03' 38.22" E
Ahead = N 2° 03' 38.22" W
Chord Bear = N 45° 56' 21.78" E

Course from PT PR_PATH_R_25 to 5747 N 2° 03' 38.22" W Dist 210.8106

Point 5747 N 430,979.6102 E 2,884,627.6373 Sta 2018+93.54

Ending chain PR_PATH_R description

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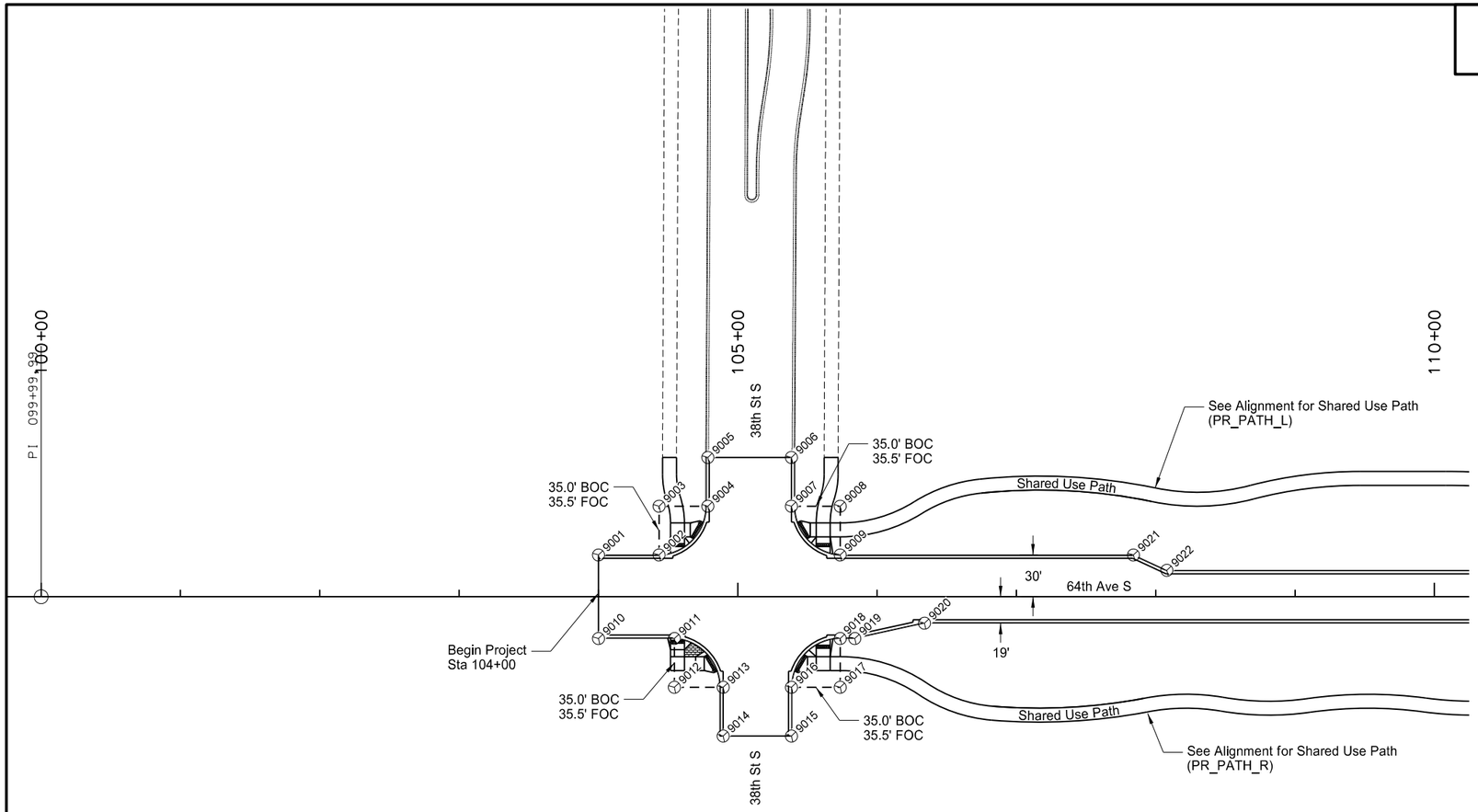
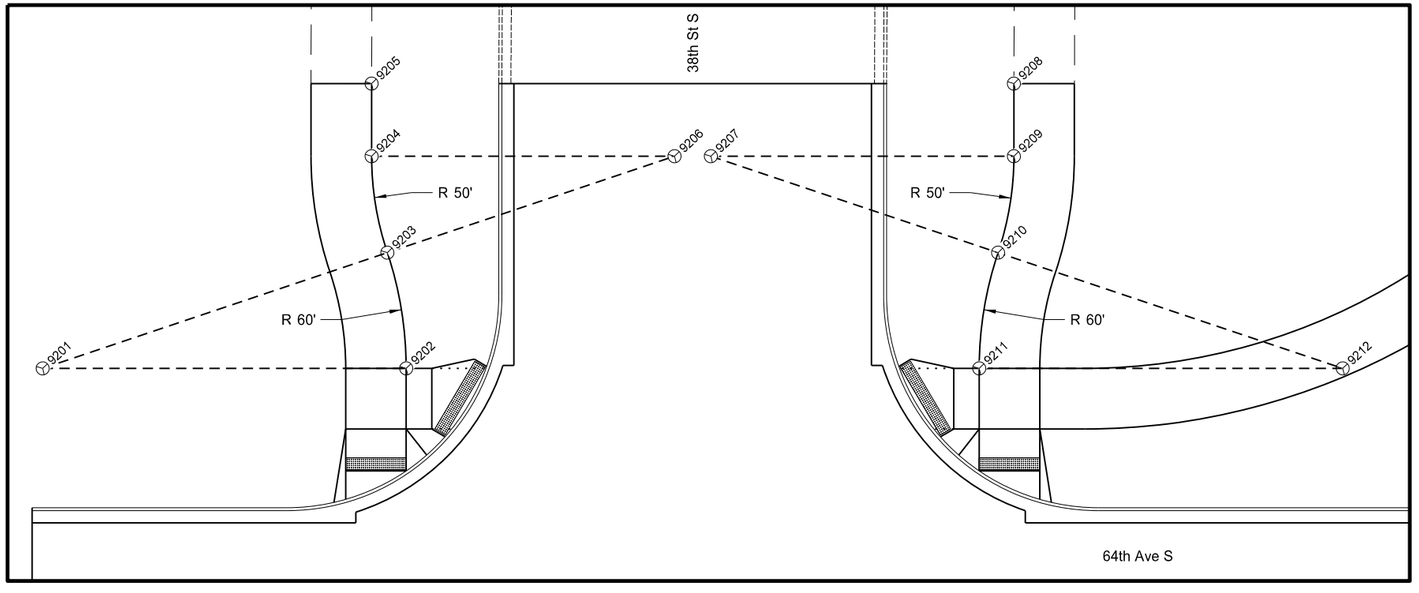
64th Avenue South - 38th St S to 33rd St S

Survey Coordinate and Curve Data

PR_PATH_R
64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	82	1





Point	Northing	Easting	Station	Offset	Desc
9001	430832.77	2883056.90	104+00.00	-30.00	BOC
9002	430834.33	2883100.37	104+43.50	-30.00	BOC
9003	430869.31	2883099.12	104+43.50	-65.00	CEN OF RAD
9004	430870.57	2883134.09	104+78.50	-65.00	BOC
9005	430905.54	2883132.83	104+78.50	-100.00	BOC
9006	430907.70	2883192.80	105+38.50	-100.00	BOC
9007	430872.72	2883194.05	105+38.50	-65.00	BOC
9008	430873.98	2883229.03	105+73.50	-65.00	CEN OF RAD
9009	430839.00	2883230.29	105+73.50	-30.00	BOC
9010	430772.80	2883059.06	104+00.00	30.00	BOC
9011	430774.76	2883113.52	104+54.50	30.00	BOC
9012	430739.79	2883114.78	104+54.50	65.00	CEN OF RAD
9013	430741.05	2883149.76	104+89.50	65.00	BOC
9014	430706.07	2883151.02	104+89.50	100.00	BOC
9015	430707.83	2883199.99	105+38.50	100.00	BOC
9016	430742.81	2883198.73	105+38.50	65.00	BOC
9017	430744.07	2883233.71	105+73.50	65.00	CEN OF RAD
9018	430779.04	2883232.45	105+73.50	30.00	BOC
9019	430779.42	2883242.94	105+84.00	30.00	BOC
9020	430792.21	2883292.51	106+34.00	19.00	BOC
9021	430846.57	2883440.65	107+84.00	-30.00	BOC
9022	430836.44	2883465.03	108+08.00	-19.00	BOC

Point	Northing	Easting	Station	Offset	Desc
9201	430855.81	2883057.79	104+01.72	-53.00	CEN OF RAD
9202	430857.97	2883117.76	104+61.72	-53.00	EOSW
9203	430876.94	2883113.95	104+58.60	-72.10	EOSW
9204	430892.76	2883110.78	104+56.00	-88.01	EOSW
9205	430904.73	2883110.35	104+56.00	-100.00	EOSW
9206	430894.55	2883160.75	105+06.00	-88.01	CEN OF RAD
9207	430894.77	2883166.74	105+12.00	-88.01	CEN OF RAD
9208	430908.55	2883216.28	105+62.00	-100.00	EOSW
9209	430896.57	2883216.71	105+62.00	-88.01	EOSW
9210	430880.57	2883214.68	105+59.40	-72.10	EOSW
9211	430861.37	2883212.25	105+56.28	-53.00	EOSW
9212	430863.53	2883272.21	106+16.28	-53.00	CEN OF RAD

Note:
1) All dimensions are to Back of Curb or Edge of Sidewalk.
2) ADA ramp points can be found in Section 20.
{BOC} = Back of Curb {EOP} = Edge of Pavement
{EOSW} = Edge of Sidewalk {CEN OF RAD} = Center of Radius
{EOA} = Edge of Asphalt {FOC} = Face of Curb

N

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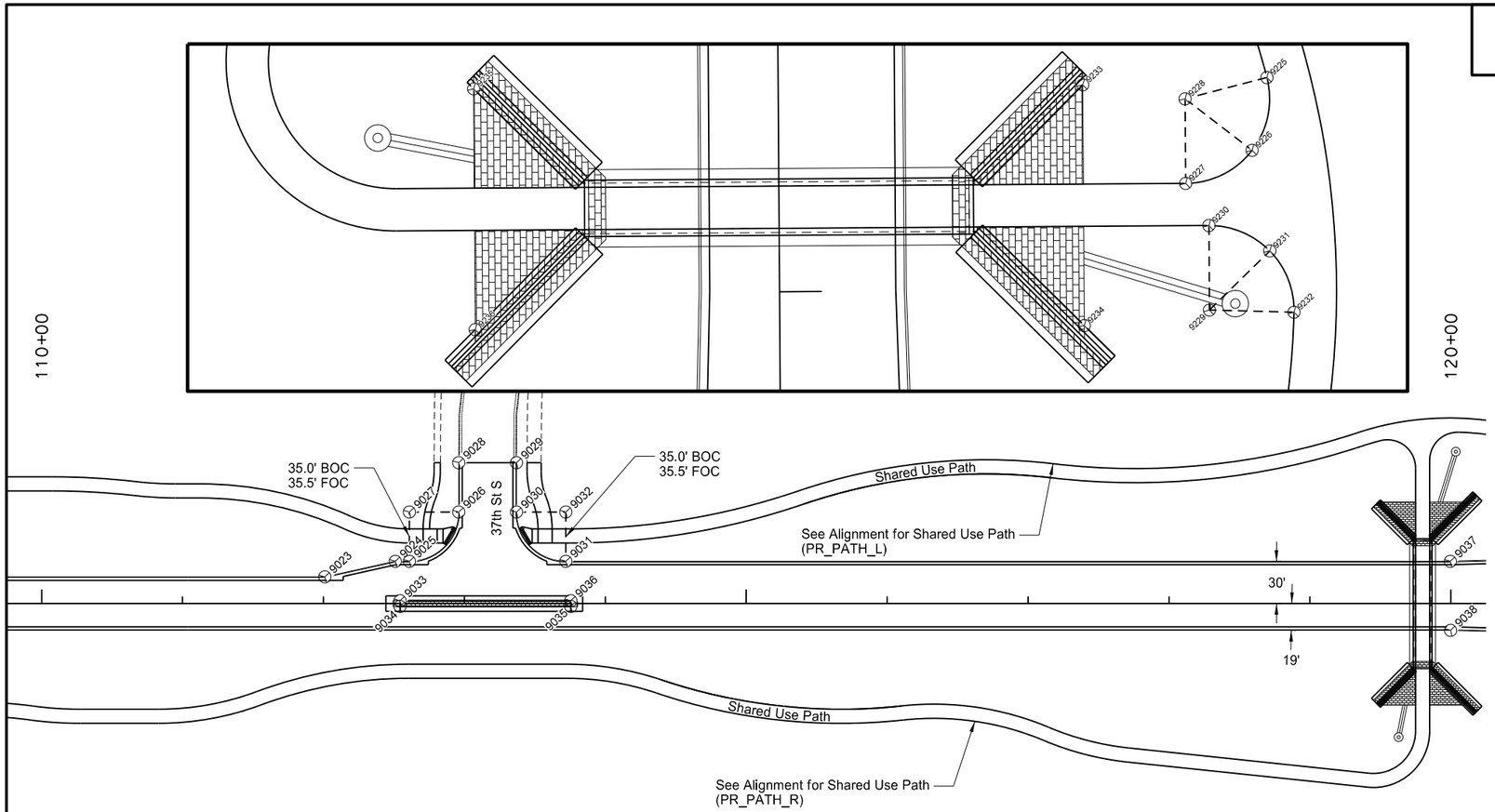
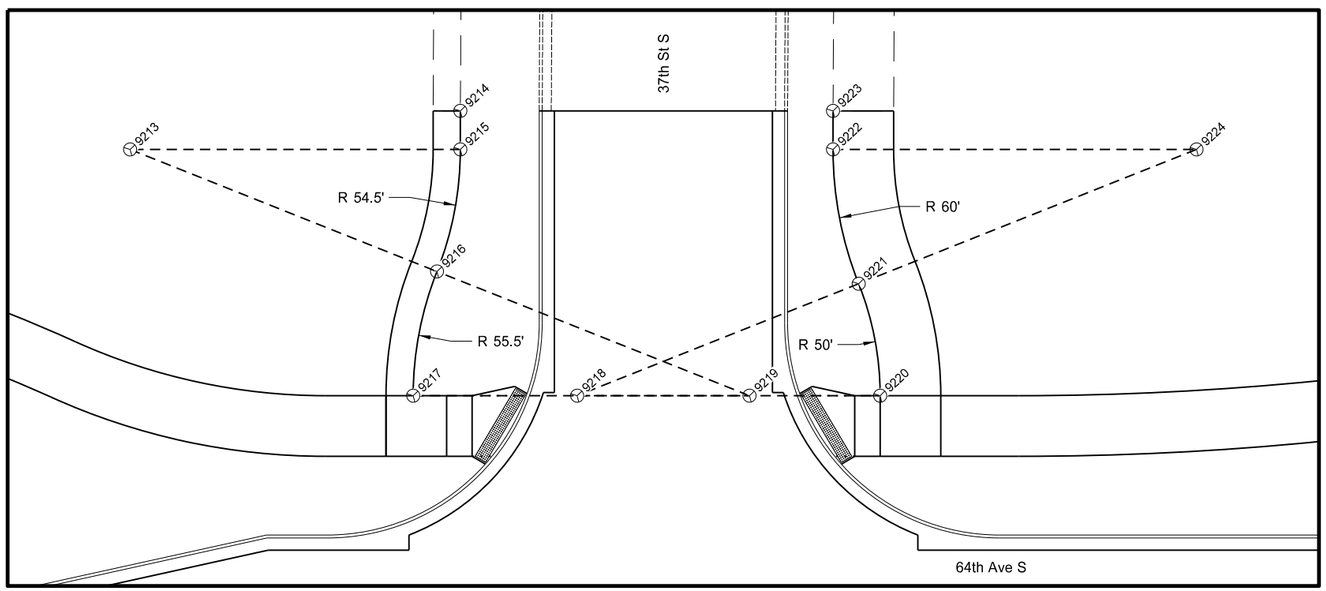
64th Avenue South - 38th St S to 33rd St S

Survey Data Layout

64th Avenue South
Sta 104+00 to 110+00 (PR 64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	82	2





Point	Northing	Easting	Station	Offset	Desc
9023	430850.57	2883857.78	112+01.00	-19.00	BOC
9024	430863.36	2883907.35	112+51.00	-30.00	BOC
9025	430863.72	2883917.34	112+61.00	-30.00	BOC
9026	430899.96	2883951.06	112+96.00	-65.00	BOC
9027	430898.70	2883916.09	112+61.00	-65.00	CEN OF RAD
9028	430934.94	2883949.81	112+96.00	-100.00	BOC
9029	430936.41	2883990.78	113+37.00	-100.00	BOC
9030	430901.43	2883992.04	113+37.00	-65.00	BOC
9031	430867.72	2884028.27	113+72.00	-30.00	BOC
9032	430902.69	2884027.01	113+72.00	-65.00	CEN OF RAD
9033	430835.50	2883911.69	112+54.33	-2.00	BOC
9034	430831.51	2883911.83	112+54.33	2.00	BOC
9035	430835.86	2884032.92	113+75.50	2.00	BOC
9036	430839.86	2884032.78	113+75.50	-2.00	BOC
9037	430890.28	2884655.48	119+99.61	-30.00	BOC
9038	430841.32	2884657.40	119+99.77	19.00	BOC

Point	Northing	Easting	Station	Offset	Desc
9213	430926.14	2883882.58	112+28.50	-93.63	CEN OF RAD
9214	430934.47	2883936.81	112+83.00	-100.00	EOSW
9215	430928.10	2883937.04	112+83.00	-93.63	EOSW
9216	430907.85	2883933.92	112+79.15	-73.50	EOSW
9217	430887.22	2883930.73	112+75.22	-53.00	EOSW
9218	430888.19	2883957.77	113+02.28	-53.00	CEN OF RAD
9219	430889.22	2883986.19	113+30.72	-53.00	CEN OF RAD
9220	430889.99	2884007.74	113+52.28	-53.00	EOSW
9221	430908.32	2884003.54	113+48.74	-71.47	EOSW
9222	430930.32	2883998.50	113+44.50	-93.63	EOSW
9223	430936.68	2883998.27	113+44.50	-100.00	EOSW
9224	430932.47	2884058.46	114+04,50	-93.63	CEN OF RAD
9225	430974.05	2884602.90	119+50.08	-115.60	EOSW
9226	430971.07	2884620.22	119+67.28	-112.00	EOSW
9227	430955.57	2884628.50	119+75.00	-96.22	EOSW
9228	430954.85	2884608.52	119+55.00	-96.22	CEN OF RAD
9229	430962.09	2884658.29	120+05.00	-101.66	CEN OF RAD
9230	430961.37	2884638,30	119+85,00	-101.66	EOSW
9231	430975.94	2884643.86	119+91.08	-116.02	EOSW
9232	430982.09	2884658.20	120+05.64	-121.65	EOSW
9233	430930.57	2884605.92	119+51.53	-72.05	EOP
9234	430932.62	2884662.82	120+08.47	-72.05	EOP
9235	430786.57	2884611.10	119+51.53	72.05	EOP
9236	430788.62	2884668.00	120+08.47	72.05	EOP

Note:
1) All dimensions are to Back of Curb or Edge of Sidewalk.
2) ADA ramp points can be found in Section 20.
{BOC} = Back of Curb
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N

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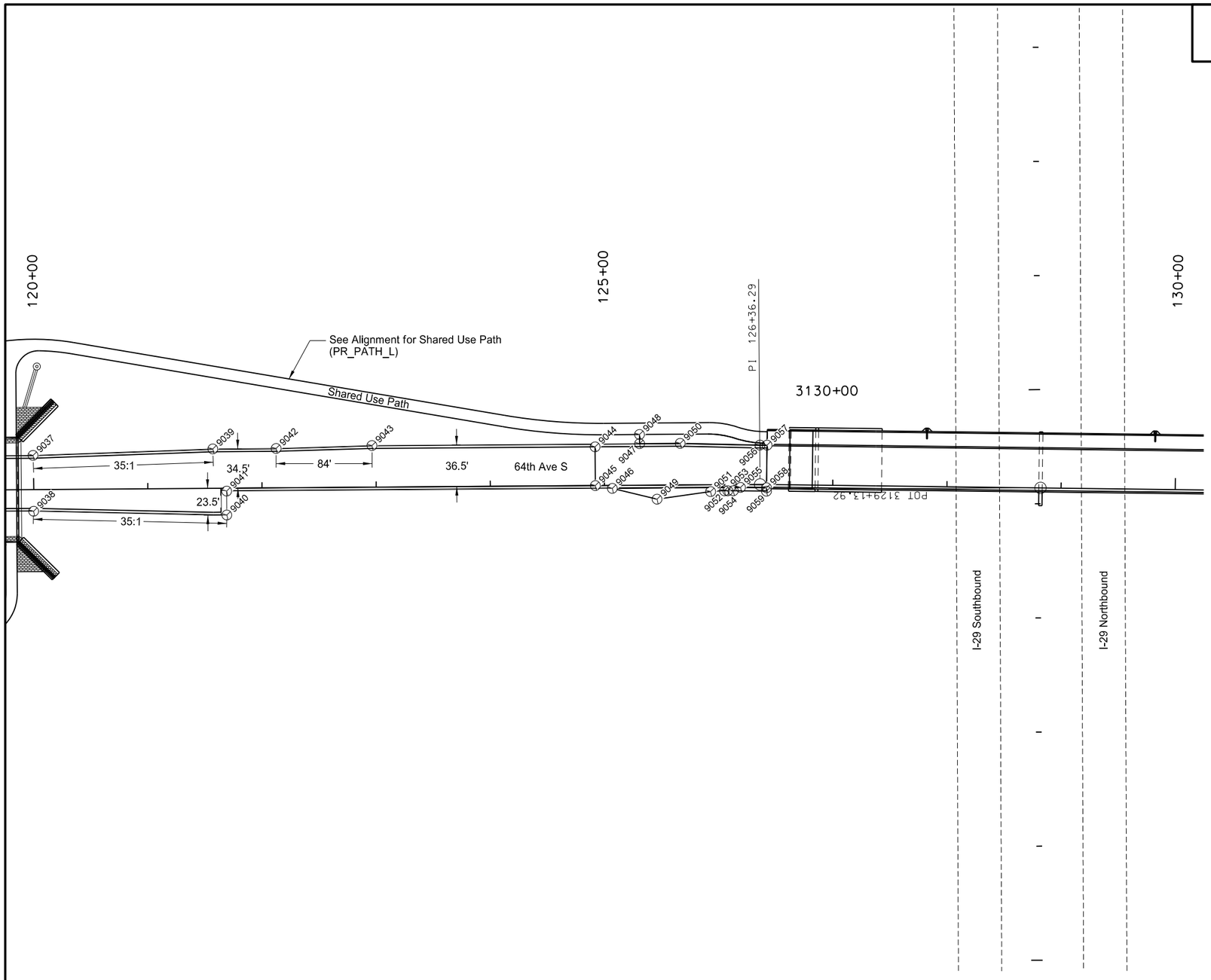
64th Avenue South - 38th St S to 33rd St S

Survey Data Layout

64th Avenue South
Sta 110+00 to 120+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	82	3



Point	Northing	Easting	Station	Offset	Desc
9039	430900.44	2884812.72	121+57.11	-34.50	BOC
9040	430842.91	2884826.68	121+69.00	23.50	BOC
9041	430863.89	2884825.93	121+69.00	2.50	BOC
9042	430902.44	2884868.14	122+12.57	-34.50	BOC
9043	430907.46	2884952.01	122+96.57	-36.50	BOC
9044	430911.98	2885147.41	124+92.00	-34.00	EOA
9045	430878.01	2885148.63	124+92.00	0.00	EOA
9046	430876.04	2885163.54	125+06.83	2.50	BOC/EOA
9047	430915.89	2885186.31	125+31.02	-36.50	BOC/EOA
9048	430923.89	2885186.01	125+31.01	-44.51	EOA/EOSW
9049	430867.68	2885202.96	125+45.93	12.27	EOA
9050	430917.16	2885221.82	125+66.56	-36.50	BOC/EOA
9051	430875.70	2885249.69	125+92.91	5.94	EOA
9052	430876.75	2885261.81	126+05.06	5.33	EOA
9053	430876.85	2885264.73	126+07.98	5.33	EOA
9054	430876.98	2885269.53	126+12.79	5.38	EOA
9055	430880.08	2885275.78	126+19.15	2.50	BOC/EOA
9056	430917.68	2885291.70	126+36.29	-34.50	BOC/EOA
9057	430917.78	2885297.96	126+42.00	-34.50	BOC/EOA
9058	430880.46	2885298.58	126+42.00	2.83	BOC/EOA
9059	430877.46	2885298.63	126+42.00	5.83	EOA

Note:
1) All dimensions are to Back of Curb or Edge of Sidewalk.
2) ADA ramp points can be found in Section 20.

{BOC} = Back of Curb
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{EOA} = Edge of Asphalt
{EOP} = Edge of Pavement
{CEN OF RAD} = Center of Radius
{FOC} = Face of Curb

N

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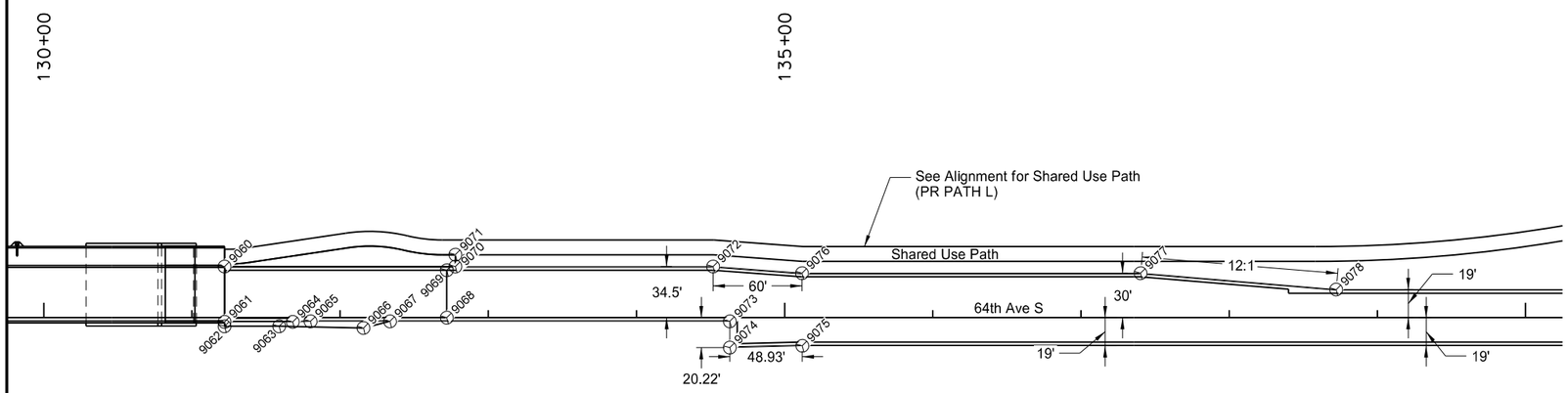
64th Avenue South - 38th St S to 33rd St S

Survey Data Layout

64th Avenue South
Sta 120+00 to 130+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	82	4



Point	Northing	Easting	Station	Offset	Desc
9060	430925.70	2885777.90	131+22.00	-34.50	BOC/EOA
9061	430888.37	2885778.52	131+22.00	2.83	BOC/EOA
9062	430885.37	2885778.56	131+21.99	5.83	EOA
9063	430885.98	2885815.42	131+58.86	5.83	EOA
9064	430889.13	2885824.54	131+68.03	2.83	BOC/EOA
9065	430889.66	2885836.54	131+80.03	2.50	BOC/EOA
9066	430885.78	2885872.33	132+15.76	6.97	EOA
9067	430890.55	2885890.14	132+33.64	2.50	BOC/EOA
9068	430893.68	2885928.45	132+72.00	0.00	EOA
9069	430925.67	2885927.92	132+72.00	-32.00	EOA
9070	430928.27	2885933.68	132+77.80	-34.50	BOC/EOA
9071	430936.28	2885933.54	132+77.80	-42.51	EOA/EOSW
9072	430931.14	2886107.56	134+51.70	-34.50	BOC
9073	430894.33	2886119.46	134+63.00	2.50	BOC
9074	430876.61	2886119.76	134+63.00	20.22	BOC
9075	430878.64	2886168.66	135+11.93	19.00	BOC
9076	430927.63	2886167.62	135+11.70	-30.00	BOC
9077	430931.39	2886396.10	137+40.21	-30.00	BOC
9078	430922.57	2886528.27	138+72.21	-19.00	BOC

Note:
1) All dimensions are to Back of Curb or Edge of Sidewalk.
2) ADA ramp points can be found in Section 20.

{BOC} = Back of Curb
{EOSW} = Edge of Sidewalk
{EOA} = Edge of Asphalt
{EOP} = Edge of Pavement
{CEN OF RAD} = Center of Radius
{FOC} = Face of Curb

N

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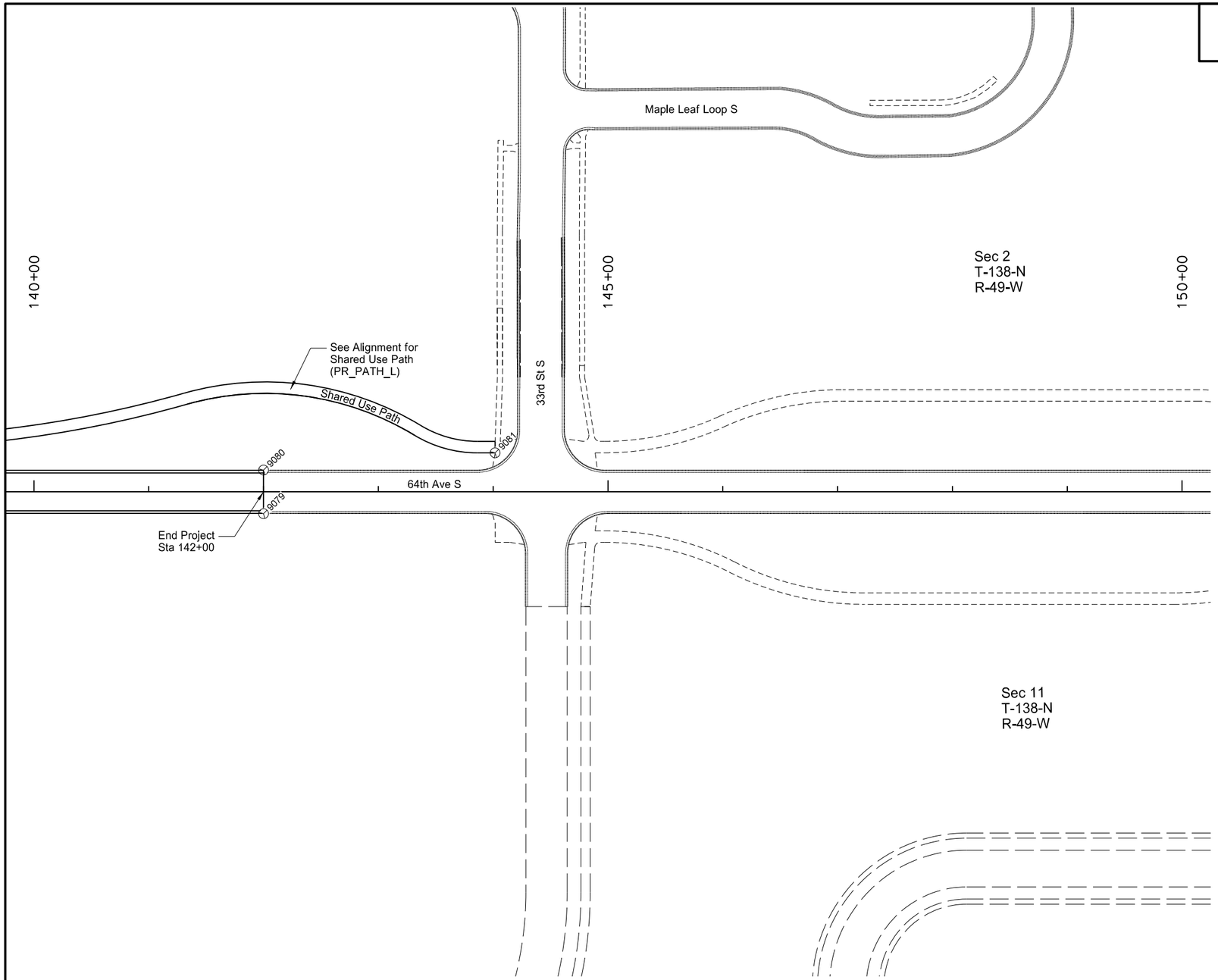
64th Avenue South - 38th St S to 33rd St S

Survey Data Layout

64th Avenue South
Sta 130+00 to 140+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	82	5

Point	Northing	Easting	Station	Offset	Desc
9079	430889.98	2886856.63	142+00.00	19.00	BOC
9080	430927.98	2886856.01	142+00.00	-19.00	BOC
9081	430946.30	2887057.40	144+01.67	-34.00	EOSW



Note:
1) All dimensions are to Back of Curb or Edge of Sidewalk.
2) ADA ramp points can be found in Section 20.

{BOC} = Back of Curb
{EOP} = Edge of Pavement
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{FOC} = Face of Curb

N

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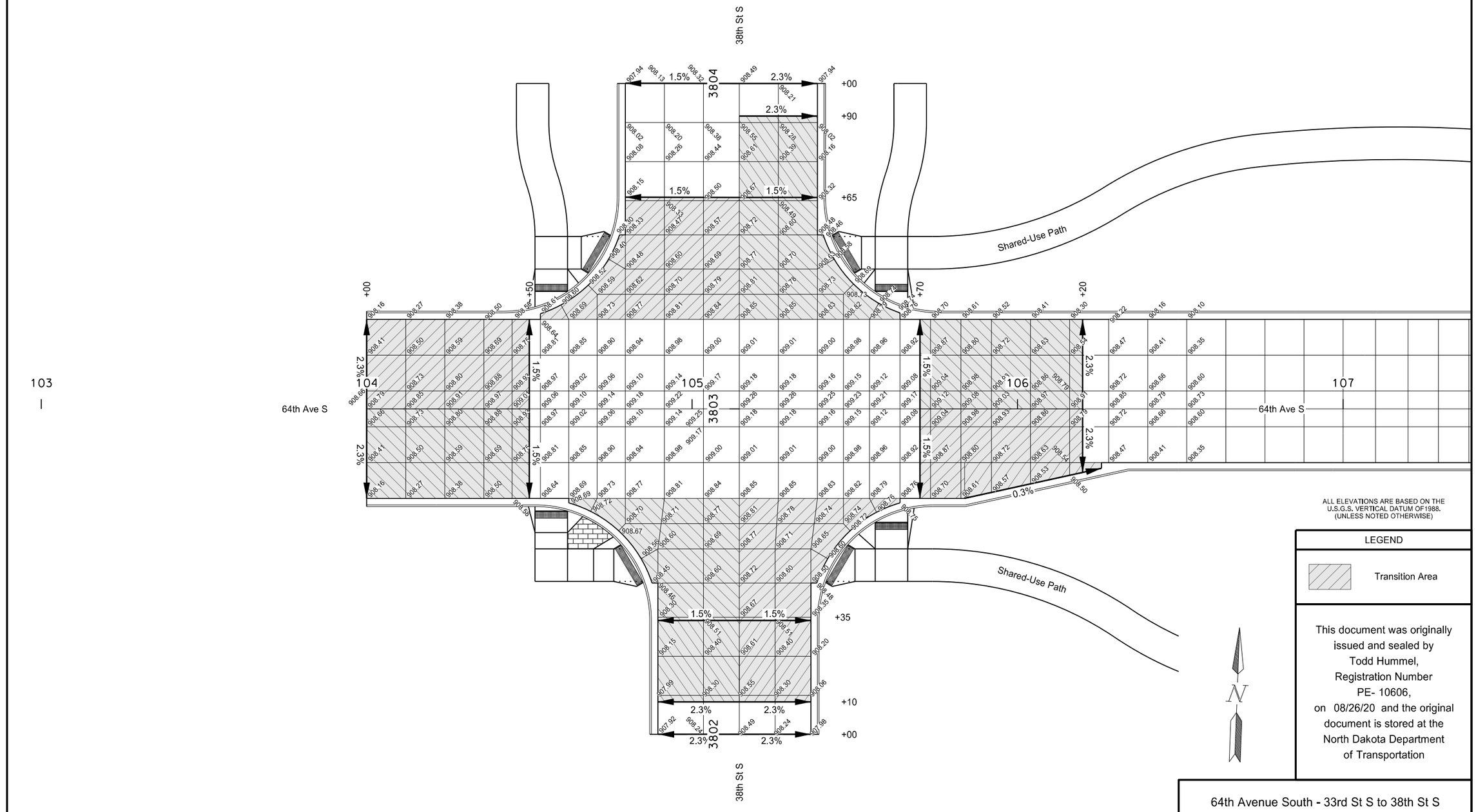
64th Avenue South - 38th St S to 33rd St S

Survey Data Layout

64th Avenue South
Sta 140+00 to 150+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	82	6



ALL ELEVATIONS ARE BASED ON THE U.S.G.S. VERTICAL DATUM OF1988. (UNLESS NOTED OTHERWISE)

LEGEND

Transition Area

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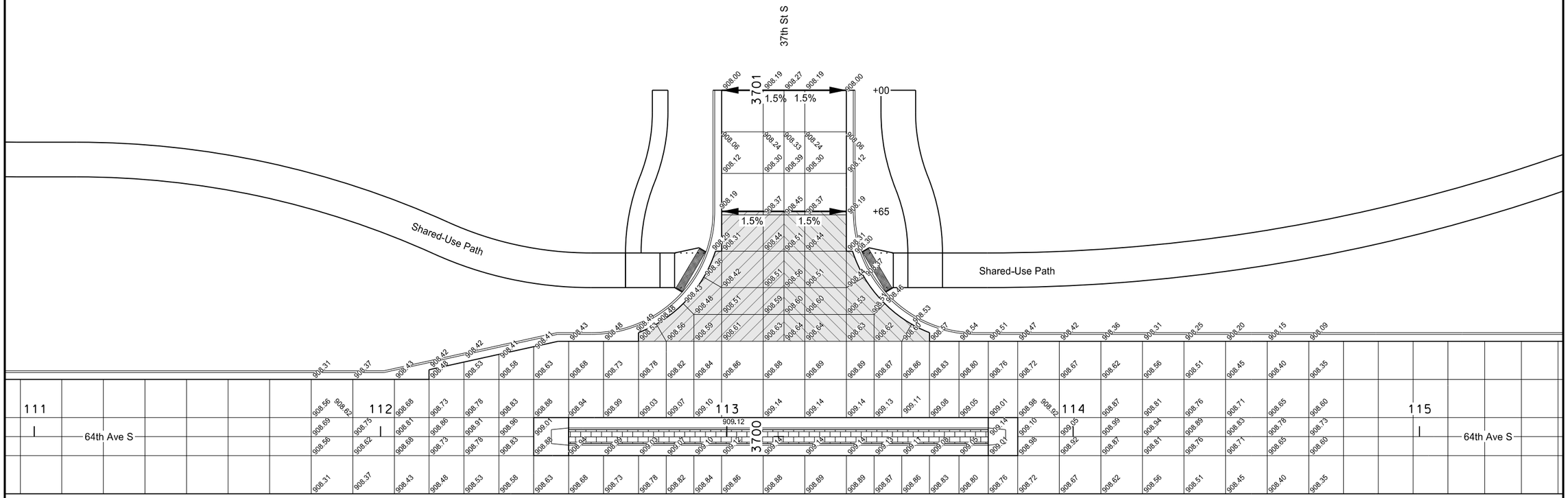
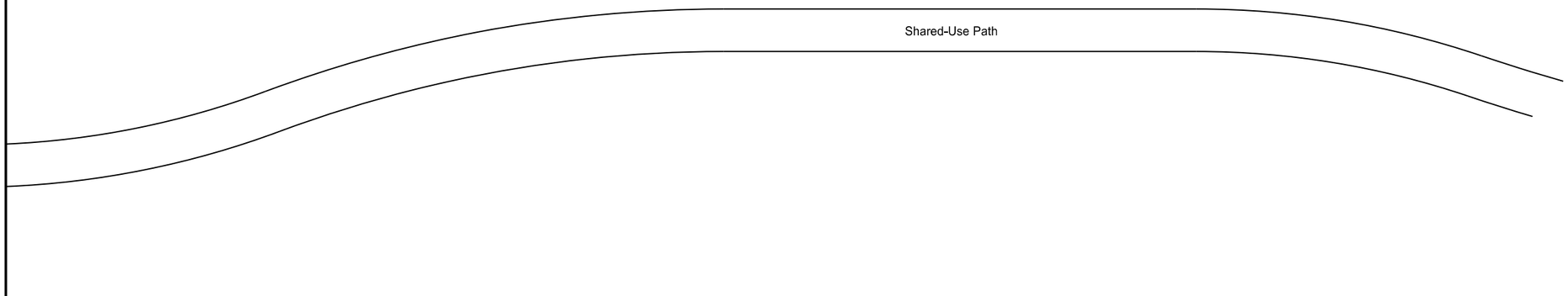
64th Avenue South - 33rd St S to 38th St S

Intersection Grades

38th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	82	7





ALL ELEVATIONS ARE BASED ON THE U.S.G.S. VERTICAL DATUM OF 1988. (UNLESS NOTED OTHERWISE)

LEGEND

Transition Area

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64th Avenue South - 33rd St S to 38th St S

Intersection Grades

37th Avenue South

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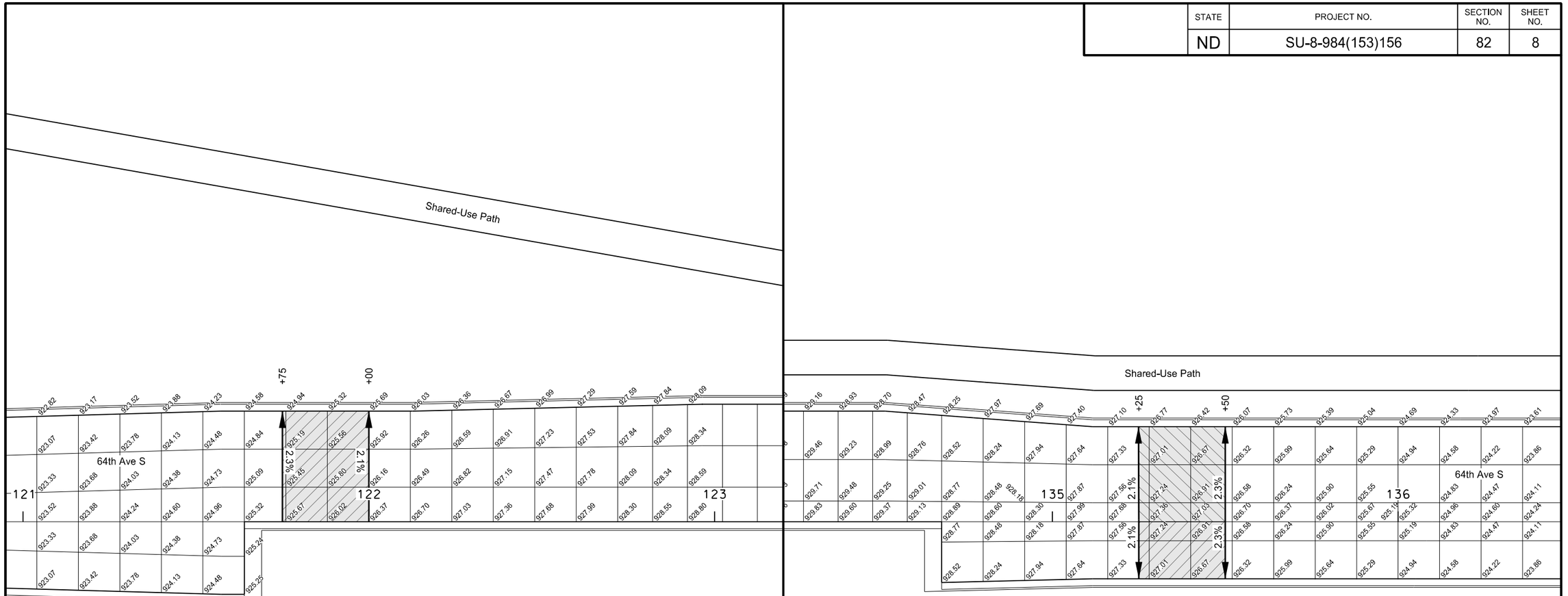
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	82	8



ALL ELEVATIONS ARE BASED ON THE U.S.G.S. VERTICAL DATUM OF1988. (UNLESS NOTED OTHERWISE)

LEGEND

Transition Area

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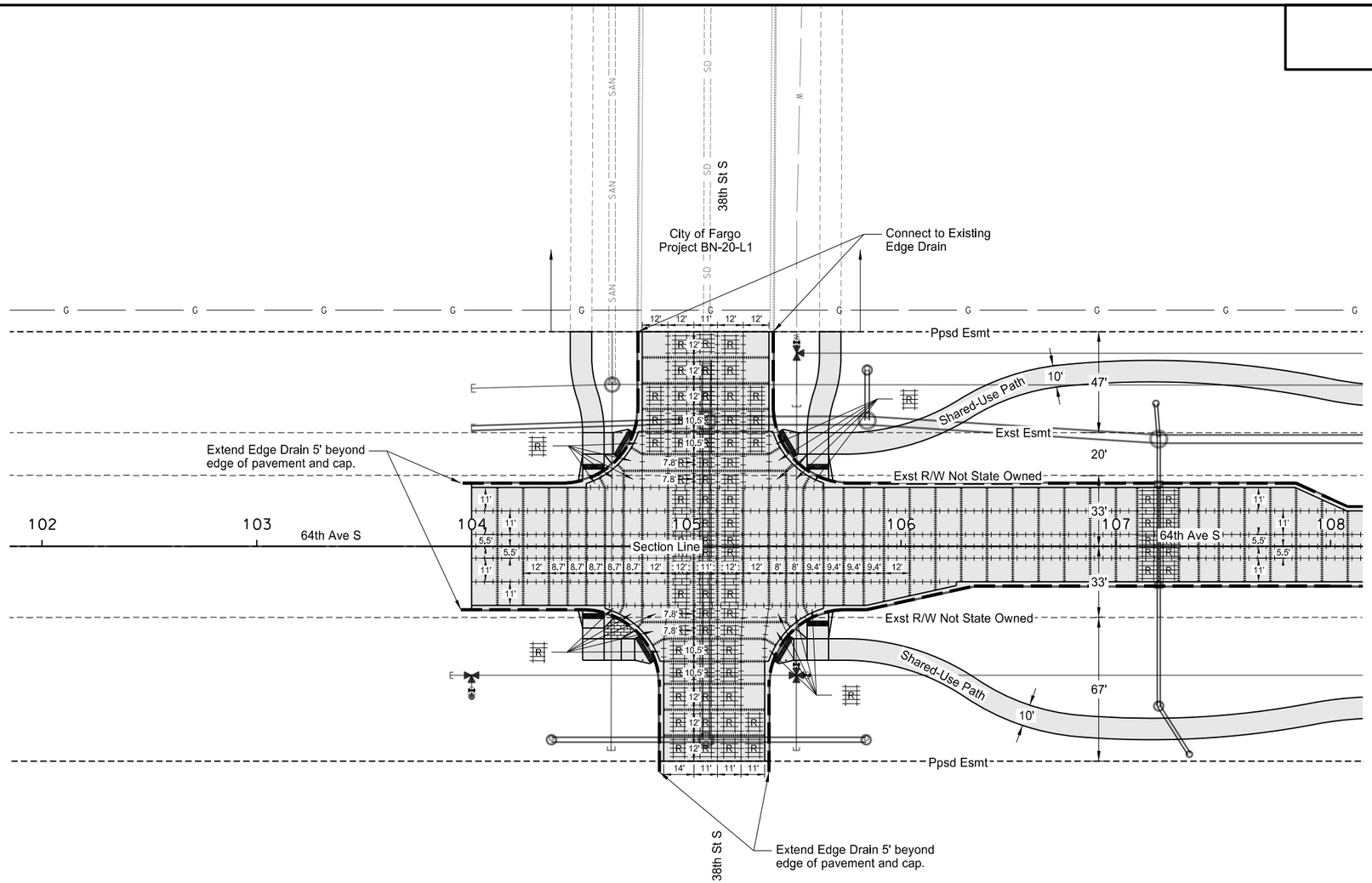
N

64th Avenue South - 33rd St S to 38th St S

West Overpass Transition
East Overpass Transition

64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	1



SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	1,194	CY
		Shared Use Path	100	CY
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
		Mainline	3,192	SY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	3,546	SY
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		Mainline	930	LF
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	910	LF
750	0030	PIGMENTED IMPRINTED CONCRETE		
		38th Street South - SW ADA Ramp	11	SY
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	701	SY
750	0140	SIDEWALK CONCRETE 6IN		
		ADA Ramps	128	SY

Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

N

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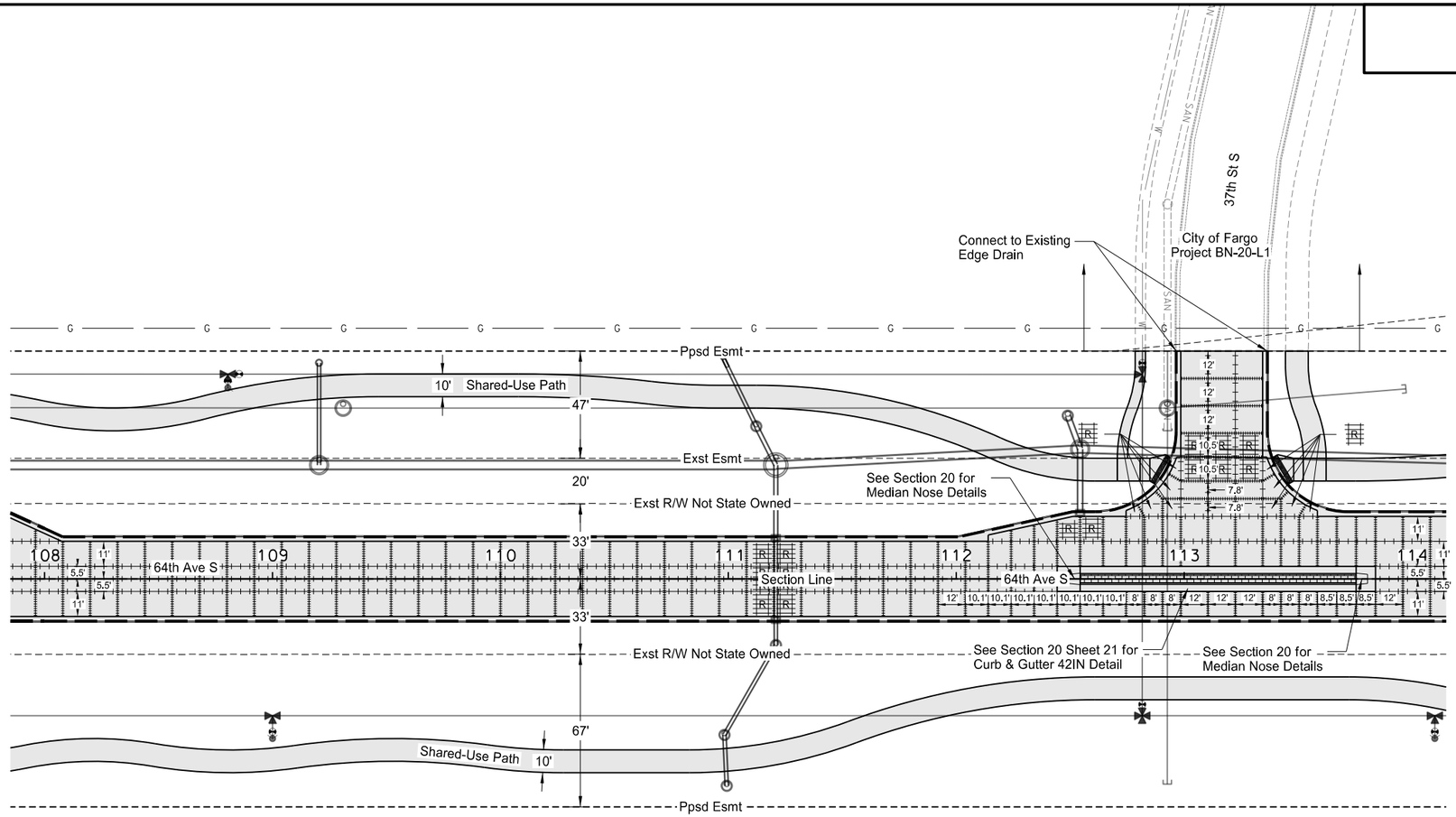
64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 104+00 to 108+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	2



SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	1,124	CY
		Shared Use Path	168	CY
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
		Mainline	2,611	SY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	3,266	SY
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		Mainline	1,273	LF
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	1,273	LF
748	0210	CURB & GUTTER 42IN		
		Median	243	LF
750	0030	PIGMENTED IMPRINTED CONCRETE		
		Median	54	SY
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	1,344	SY
750	0140	SIDEWALK CONCRETE 6IN		
		ADA Ramps	26	SY
750	0210	CONCRETE MEDIAN NOSE PAVING		
		Median Nose	13	SY

Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

N

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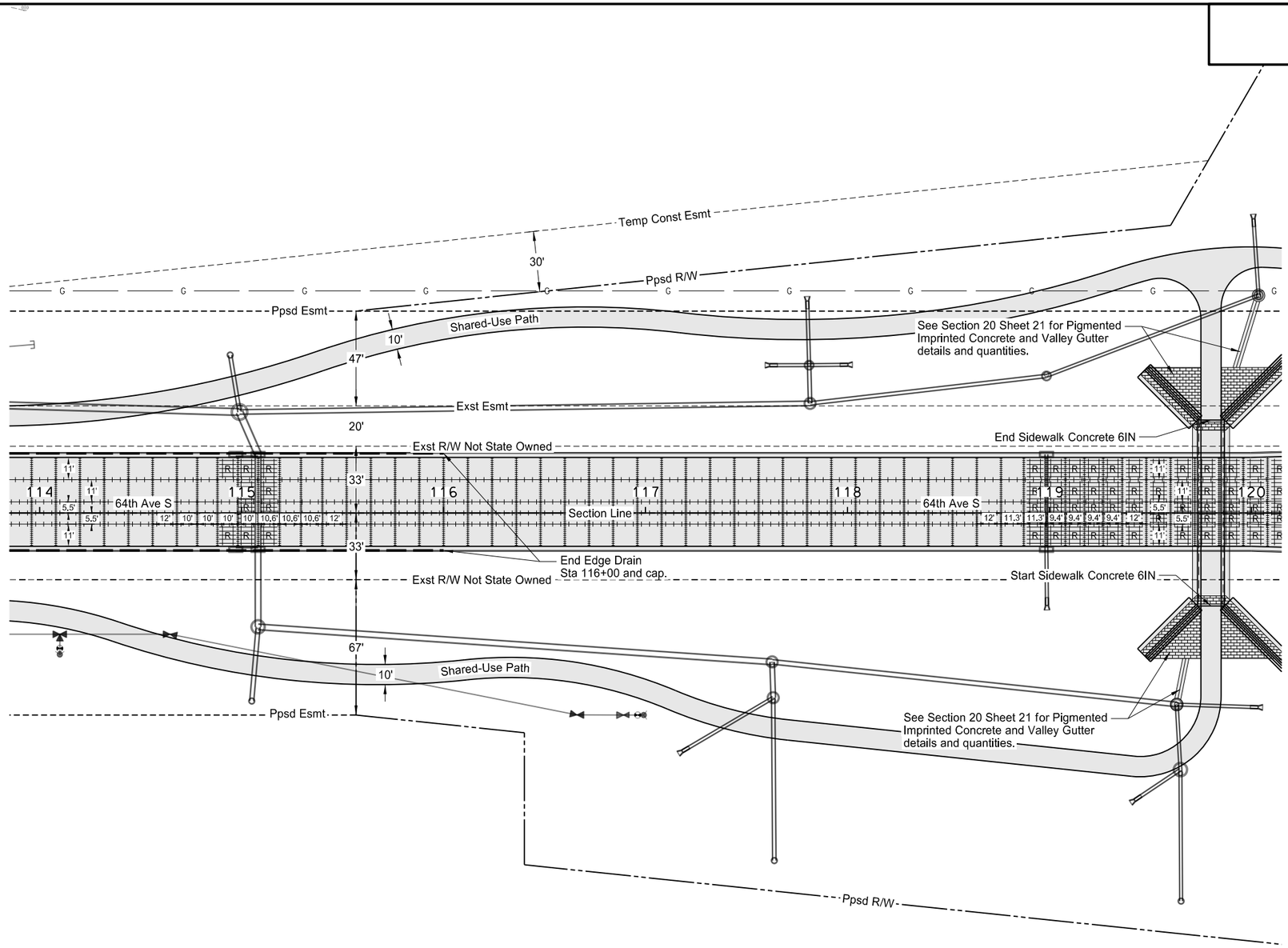
64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 108+00 to 114+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	3



SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	1,138	CY
		Shared Use Path	184	CY
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
		Mainline	2,934	SY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	3,401	SY
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		Mainline	400	LF
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	1,200	LF
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	1,511	SY
750	0140	SIDEWALK CONCRETE 6IN		
		Pedestrian Underpass	123	SY

Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

N

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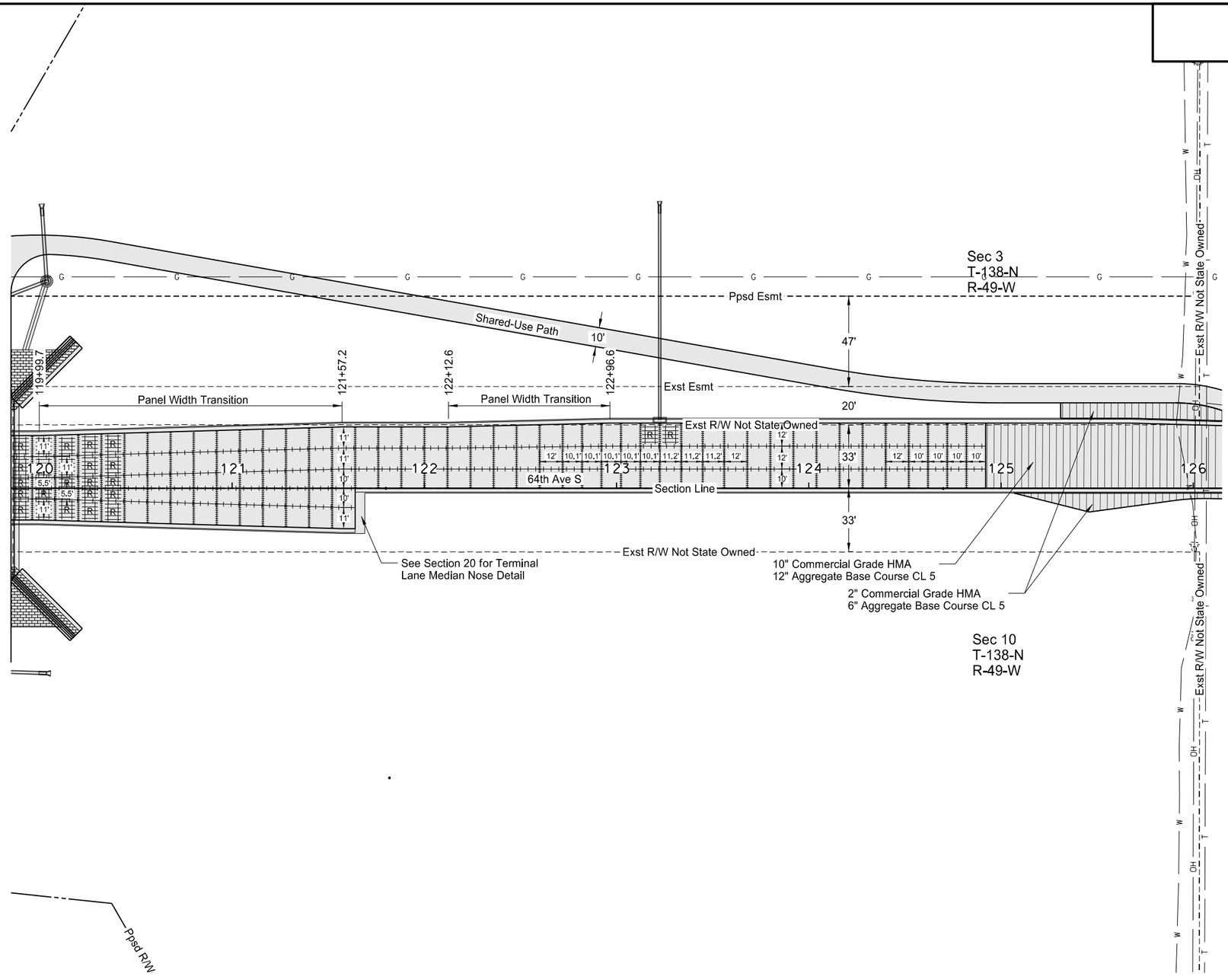
64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 114+00 to 120+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	4



SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	998	CY
		Guardrail Grading	27	CY
		Shared Use Path	81	CY
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Guardrail Grading	14	TON
		Mainline	226	TON
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
		Mainline	2,107	SY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	2,994	SY
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	1,196	LF
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	675	SY
750	0210	CONCRETE MEDIAN NOSE PAVING		
		Median Nose	14	SY

Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

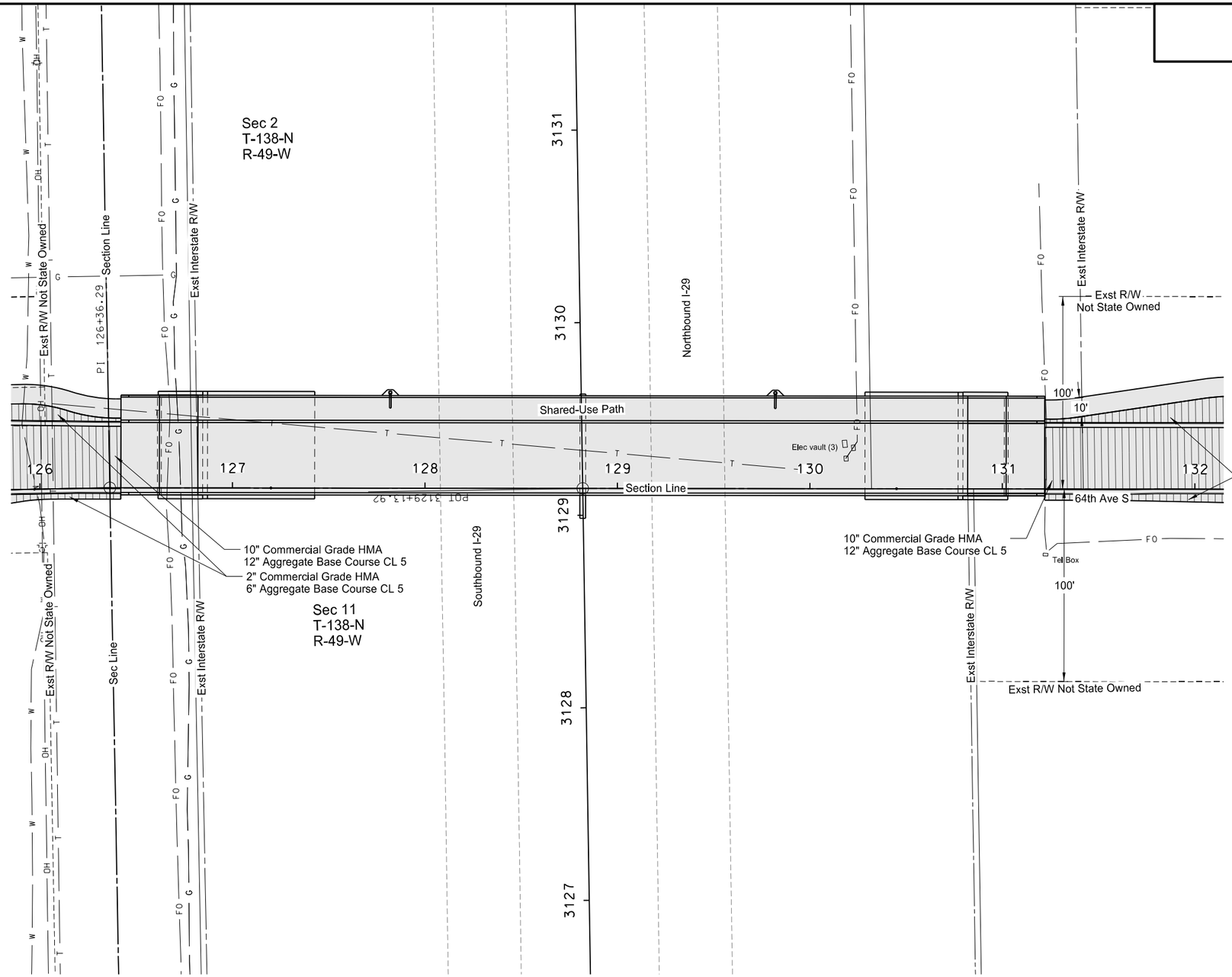
64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 120+00 to 126+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	5

SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	175	CY
		Guardrail Grading	28	CY
		Shared Use Path	14	CY
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Guardrail Grading	14	TON
		Mainline	240	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	526	SY
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	241	LF
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	137	SY



Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

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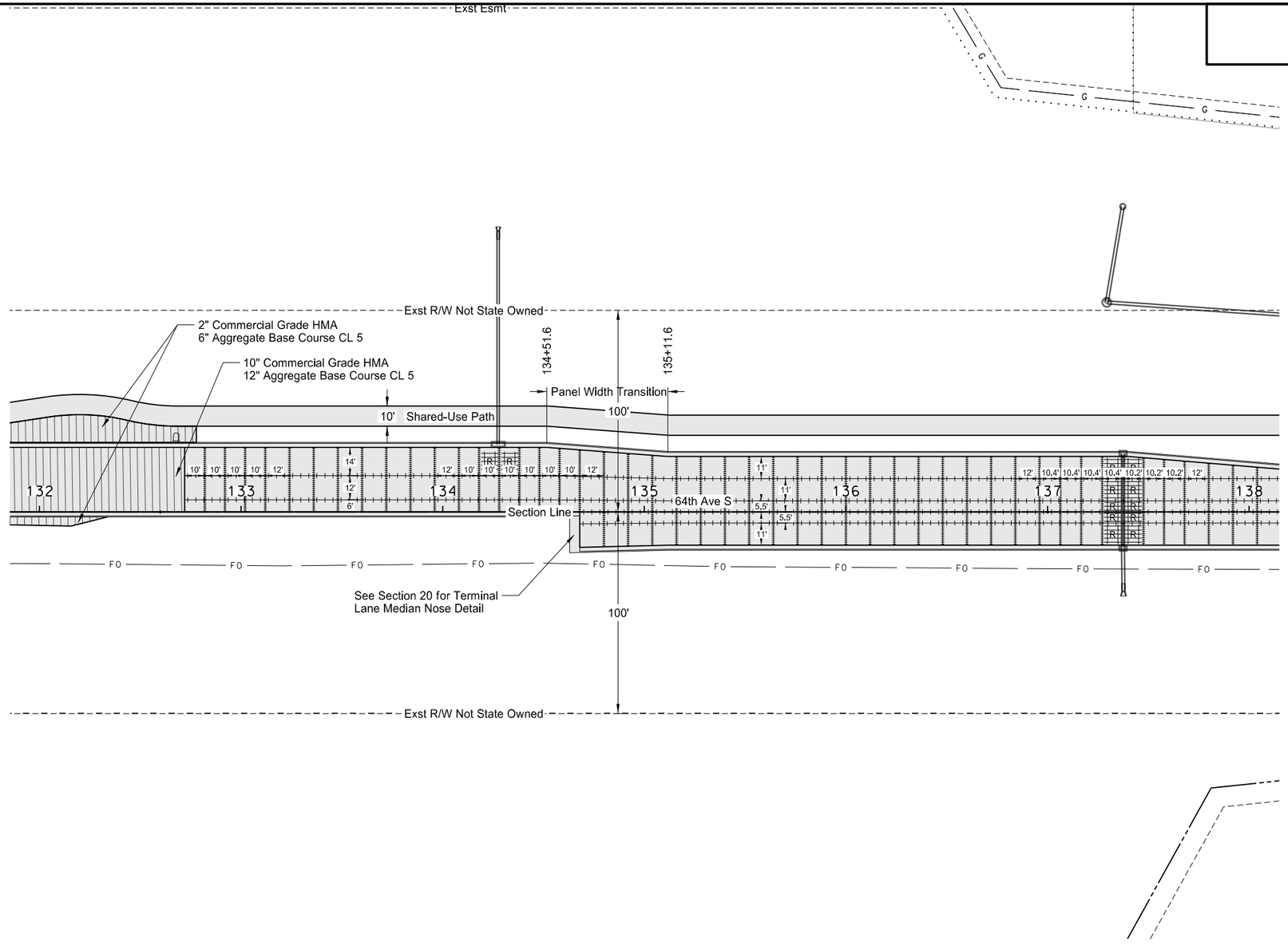
64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 126+00 to 132+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	6



SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	1,016	CY
		Guardrail Grading	22	CY
		Shared Use Path	80	CY
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Guardrail Grading	12	TON
		Mainline	142	TON
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
		Mainline	2,313	SY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	3,048	SY
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	1,196	LF
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	668	SY
750	0210	CONCRETE MEDIAN NOSE PAVING		
		Median Nose	12	SY

Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

N

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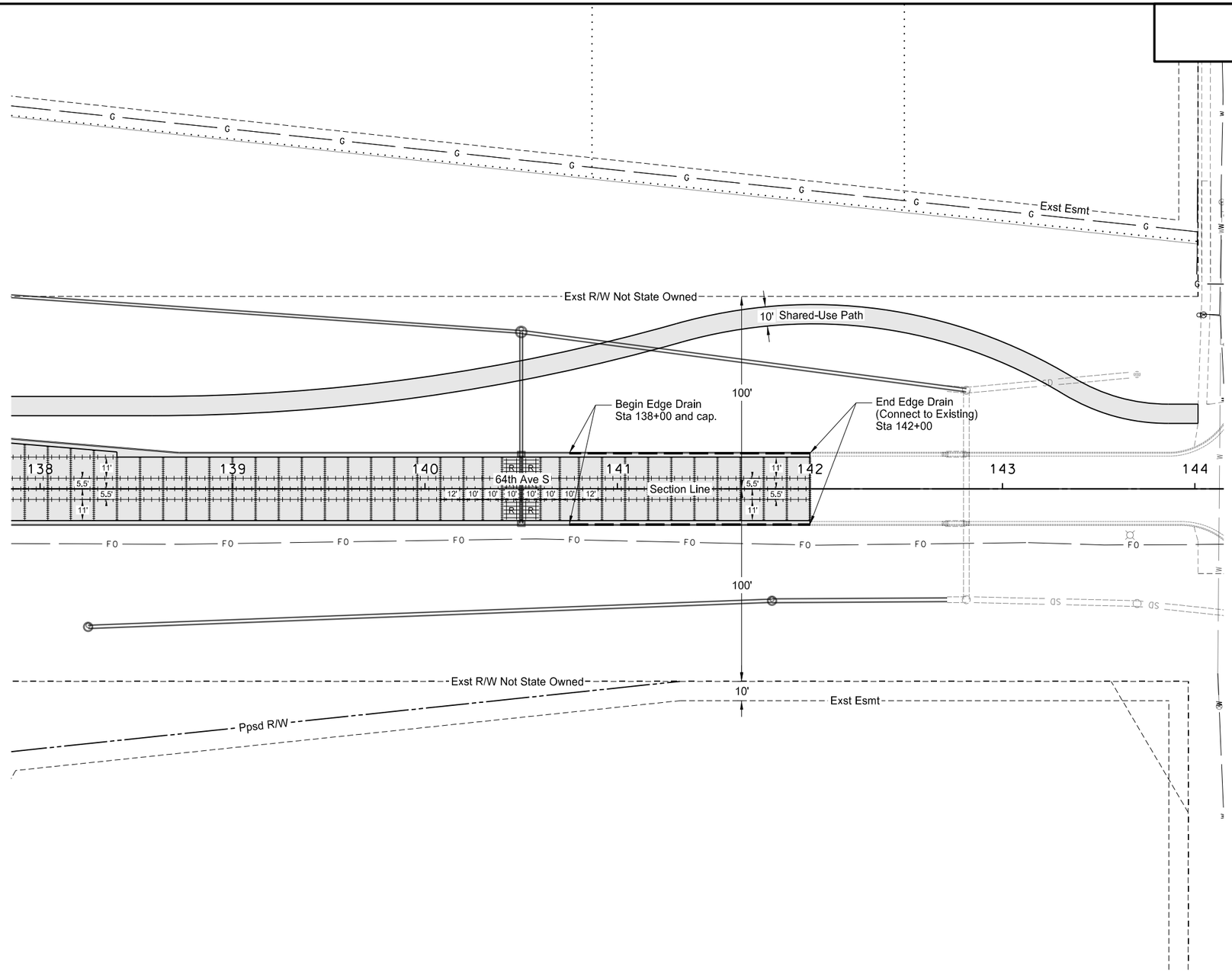
64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 132+00 to 138+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	90	7



SPEC	CODE	BID ITEM	QTY	UNIT
302	0121	AGGREGATE BASE COURSE CL 5		
		Mainline	604	CY
		Shared Use Path	125	CY
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
		Mainline	1,491	SY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1		
		Mainline	1,802	SY
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		Mainline	250	LF
748	0190	CURB & GUTTER-TYPE I 30IN		
		Mainline	801	LF
750	0120	SIDEWALK CONCRETE 5IN REINF		
		Shared Use Path	684	SY

Note: Transerve joints are spaced at 12' unless otherwise specified

LEGEND

- Tied Joint
- Doweled Joint
- HMA
- Pigmented Imprinted Concrete
- Edge Drain

N

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64th Avenue South - 38th St S to 33rd St S

Paving Layouts

64th Avenue South
Sta 138+00 to 144+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 21	22		Tot	TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE						35	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES						28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)						18	
G20-2-48	**48"x24"**	**END ROAD WORK**	**2**	**2**		**4**	**4**	**26**	**104**
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)						18	
G20-10-108	108"x48"	CONTRACTOR SIGN						70	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS						43	
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW						36	
G20-55-96	**96"x48"**	**SPEED LIMIT ENFORCED - MINIMUM FEE $80 WHEN WORKERS PRESENT**		**4**		**4**	**4**	**59**	**236**
M1-1-24	**24"x24"**	**INTERSTATE ROUTE MARKER (Post and installation only)**		**36**		**36**	**36**	**10**	**360**
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)						10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)						10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)						10	
M3-1-24	**24"x12"**	**NORTH (Mounted on route marker post)**		**18**		**18**	**18**	**7**	**126**
M3-2-24	24"x12"	EAST (Mounted on route marker post)						7	
M3-2(I)-24	24"x12"	EAST (Mounted on route marker post)						7	
M3-2(I)-36	36"x18"	EAST (Mounted on route marker post)						10	
M3-3-24	**24"x12"**	**SOUTH (Mounted on route marker post)**		**18**		**18**	**18**	**7**	**126**
M3-4-24	24"x12"	WEST (Mounted on route marker post)						7	
M3-4(I)-24	24"x12"	WEST (Mounted on route marker post)						7	
M3-4(I)-36	36"x18"	WEST (Mounted on route marker post)						10	
M4-8-24	**24"x12"**	**DETOUR (Mounted on route marker post)**		**34**		**34**	**34**	**7**	**238**
M4-8-36	36"x18"	DETOUR (Mounted on route marker post)						10	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT						15	
M4-10-48	**48"x18"**	**DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)**		**2**		**2**	**2**	**7**	**14**
M5-1-21	**21"x15"**	**ADVANCE TURN ARROW RT or LT(Mounted on route marker post)**		**8**		**8**	**8**	**7**	**56**
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)						9	
M5-1(I)-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)						9	
M6-1-21	**21"x15"**	**DIRECTIONAL ARROW RT or LT (Mounted on route marker post)**		**8**		**8**	**8**	**7**	**56**
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						9	
M6-1(I)-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						7	
M6-1(I)-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						9	
M6-2-21	**21"x15"**	**DIRECTIONAL ARROW DIAGONAL RT or LT (Mounted on route marker post)**		**2**		**2**	**2**	**7**	**14**
M6-2(I)-30	30"x21"	DIRECTIONAL ARROW DIAGONAL RT or LT (Mounted on route marker post)						9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)						7	
M6-3(I)-30	30"x21"	DIRECTIONAL ARROW UP (Mounted on route marker post)						9	
R1-1-48	48"x48"	STOP						32	
R1-2-60	60"x60"	YIELD						29	
R2-1-36	**36"x48"**	**SPEED LIMIT __ (Portable only)**	**4**			**4**	**4**	**30**	**120**
R2-1-48	**48"x60"**	**SPEED LIMIT __**		**14**		**14**	**14**	**39**	**546**
R2-1aP-24	24"x18"	MINIMUM FEE $80 (Mounted on Speed Limit post)						10	
R3-2-48	48"x48"	NO LEFT TURN						35	
R4-1-48	48"x60"	DO NOT PASS						39	
R4-7-48	48"x60"	KEEP RIGHT						39	
R5-1-48	48"x48"	DO NOT ENTER						35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)						14	
R7-1-12	12"x18"	NO PARKING ANY TIME						11	
R9-9-24	**24"x12"**	**SIDEWALK CLOSED (Mounted on barricade)**	**1**	**1**		**1**	**1**	**3**	**3**
R10-6-24	24"x36"	STOP HERE ON RED						16	
R11-2-48	**48"x30"**	**ROAD CLOSED (Mounted on barricade)**	**3**	**4**		**6**	**6**	**12**	**72**
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)						12	
R11-3a-60	**60"x30"**	**ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)**	**3**	**2**		**4**	**4**	**15**	**60**
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)						15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)						15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT						35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT						35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT						35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW						26	
W3-1-48	48"x48"	STOP AHEAD						35	
W3-3-48	48"x48"	SIGNAL AHEAD						35	
W3-4-48	48"x48"	BE PREPARED TO STOP						35	
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**2**	**8**		**10**	**10**	**35**	**350**
W4-2-48	**48"x48"**	**LANE ENDS RIGHT or LEFT**		**4**		**4**	**4**	**35**	**140**
W4-8a-24	**24"x18"**	**END DETOUR**		**2**		**2**	**2**	**13**	**26**
W5-1-48	48"x48"	ROAD NARROWS						35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE						35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW						35	
W6-3-48	48"x48"	TWO WAY TRAFFIC						35	
W8-1-48	48"x48"	BUMP						35	
W8-3-48	48"x48"	PAVEMENT ENDS						35	
W8-7-48	48"x48"	LOOSE GRAVEL						35	
W8-11-48	48"x48"	UNEVEN LANES						35	
W8-12-48	48"x48"	NO CENTER LINE						35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL						35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY						35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT or _ MILE						35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT or _ MILE						35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY						35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL						35	
W12-2-48	48"x48"	LOW CLEARANCE						35	
W13-1P-30	30"x30"	__ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)						14	
W14-3-64	64"x48"	NO PASSING ZONE						28	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 21	22		Tot	TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)						10	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**2**	**4**		**6**	**6**	**35**	**210**
W20-2-48	**48"x48"**	**DETOUR AHEAD or __ FT or _ MILE**		**4**		**4**	**4**	**35**	**140**
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT or _ MILE						35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT or _ MILE						35	
W20-5-48	**48"x48"**	**RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE**		**4**		**4**	**4**	**35**	**140**
W20-7-48	48"x48"	FLAGGER						35	
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back						5	
W20-52P-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)						12	
W21-1-48	48"x48"	WORKERS						35	
W21-2-48	48"x48"	FRESH OIL						35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or _ MILE						35	
W21-5-48	48"x48"	SHOULDER WORK						35	
W21-5a-48	**48"x48"**	**RIGHT or LEFT SHOULDER CLOSED**	**2**			**2**	**2**	**35**	**70**
W21-5b-48	**48"x48"**	**RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE**	**2**	**4**		**6**	**6**	**35**	**210**
W21-6-48	48"x48"	SURVEY CREW						35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT						35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY						35	
W21-52-48	48"x48"	PAVEMENT BREAKS						35	
W21-53-48	48"x48"	RUMBLE STRIPS AHEAD						35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK						35	

SPECIAL SIGNS

SPEC & CODE

704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	3417

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO. 21	22		Tot	TOTAL QUANTITY
704-0100	**FLAGGING**	MHR	**100**	**100**			**200**
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH					
704-1045	**ATTENUATION DEVICE-TYPE B-75**	EACH		**4**		**4**	**4**
704-1048	PORTABLE RUMBLE STRIPS	EACH					
704-1050	TYPE I BARRICADES	EACH					
704-1052	**TYPE III BARRICADES**	EACH	**8**	**15**		**23**	**23**
704-1060	**DELINEATOR DRUMS**	EACH	**20**	**124**		**144**	**144**
704-1065	TRAFFIC CONES	EACH					
704-1067	TUBULAR MARKERS	EACH					
704-1070	DELINEATOR	EACH					
704-1072	FLEXIBLE DELINEATORS	EACH					
704-1080	STACKABLE VERTICAL PANELS	EACH					
704-1081	VERTICAL PANELS - BACK TO BACK	EACH					
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH					
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH					
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH					
704-1095	TYPE B FLASHERS	EACH					
704-1500	OBLITERATION OF PVMT MK	SF					
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF					
704-3510	**PRECAST CONCRETE MED BARRIER - STATE FURNISHED**	EACH	**40**	**252**		**292**	**292**
704-4011	**PORTABLE CHANGEABLE MESSAGE SIGN**	EA	**1**	**2**		**3**	**3**
762-0200	RAISED PAVEMENT MARKERS	EACH					
762-0420	SHORT TERM 4IN LINE - TYPE R	LF					
762-0424	SHORT TERM 8IN LINE-TYPE R	LF					
762-0426	SHORT TERM 24IN LINE-TYPE R	LF					
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF					
762-0440	SHORT TERM MESSAGE-TYPE R	SF					

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

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Traffic Control Devices List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	100	2

Sec 3
T-138-N
R-49-W

Sec 2
T-138-N
R-49-W

Sec 10
T-138-N
R-49-W

Sec 11
T-138-N
R-49-W

105+00 110+00 115+00 120+00 125+00 130+00 135+00 140+00 145+00

3135+00 3130+00 3125+00 3120+00 3105+00 3100+00

Ppsd R/W

Section Line

Exst Interstate R/W

I-29 SB

I-29 NB

Maple Leaf Loop S

33rd St S

64th Ave S

Ppsd Esmt

Qtr Sec Line

Place at Nearest Intersection

Sand Drain Limits

Wick Drain Limits

Surcharge Limits

Begin Wick Drain
Begin Sand Drain
Sta 119+56.00

End Wick Drain
End Sand Drain
Sta 127+40.00

Begin Surcharge
Sta 116+90.00

Temp Const Esmt

Removal of Structure

Begin Wick Drain
Begin Sand Drain
Sta 130+24.00

End Wick Drain
End Sand Drain
Sta 138+10.67

End Surcharge
Sta 140+34.00

Remove and Relocate DMS Sign

Install Conduit and
Fiber for DMS
Sign Relocation

Install DMS Sign

Northbound Outside Shoulder
Closure
See Standard Drawing
D-704-24 Type HH

Temporary Traffic Control 2021 Overview

- 2021 Work Area Surcharge Limits
- Shoulder Closure
- Wick Drain Limits
- Sand Drain Limits

A	B
ROAD CLOSED — R11-2-48 — Barricade Mounted	ROAD CLOSED 00 MILES AHEAD LOCAL TRAFFIC ONLY — R11-3a-60 — Barricade Mounted

N

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64th Avenue South - 38th St S to 33rd St S

Temporary Traffic Control
2021 Overview

64th Avenue South

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	100	3

Sec 3
T-138-N
R-49-W

Sec 2
T-138-N
R-49-W

Sec 10
T-138-N
R-49-W

Sec 11
T-138-N
R-49-W

105+00 110+00 115+00 120+00 125+00 130+00 135+00 140+00 145+00

3135+00 3130+00 3125+00 3120+00 3105+00 3100+00

Ppsd R/W

Section Line

Exst Interstate R/W

I-29 SB

I-29 NB

Maple Leaf Loop S

33rd St S

64th Ave S

Begin Project
SU-8-984(153)156
Sta 104+00.00

Ppsd Esmt

City of Fargo
Project BN-20-L1

Begin Bridge Construction
Str #0029-059.264
Sta 126+82.00

Begin Approach Slab
Str #0029-059.264
Sta 126+42.00

End Bridge Construction
Str #0029-059.264
Sta 130+82.00

End Approach Slab
Str #0029-059.264
Sta 131+22.00

End Project
SU-8-984(153)156
Sta 142+00.00

Precast 12' x 9' RCB
Pedestrian Underpass

Limits of Geofoam

Southbound Outside Shoulder Closure
See Standard Drawing D-704-58

Northbound Outside Shoulder Closure
See Standard Drawing D-704-58

Southbound Inside Shoulder Closure
See Standard Drawing D-704-58

Northbound Inside Shoulder Closure
See Standard Drawing D-704-58

Southbound I-29 Closure
See Southbound Detour Route
Section 100 Sheet 5

Northbound I-29 Closure
See Northbound Detour Route
Section 100 Sheet 4

Qtr Sec Line

A

B

C

Place at
Nearest
Intersection

Temporary Traffic Control 2022 Overview

- 2022 Work Area
- Geofoam Limits
- Outside Lane Closure
- Inside Lane Closure
- I-29 Detour
  See Detour Sheets 4-5

A	B	C
ROAD CLOSED — R11-2-48 — Barricade Mounted	ROAD CLOSED 00 MILES AHEAD LOCAL TRAFFIC ONLY — R11-3a-60 — Barricade Mounted	SIDEWALK CLOSED — R9-9-24 — Barricade Mounted

N

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64th Avenue South - 38th St S to 33rd St S

Temporary Traffic Control
2022 Overview

64th Avenue South

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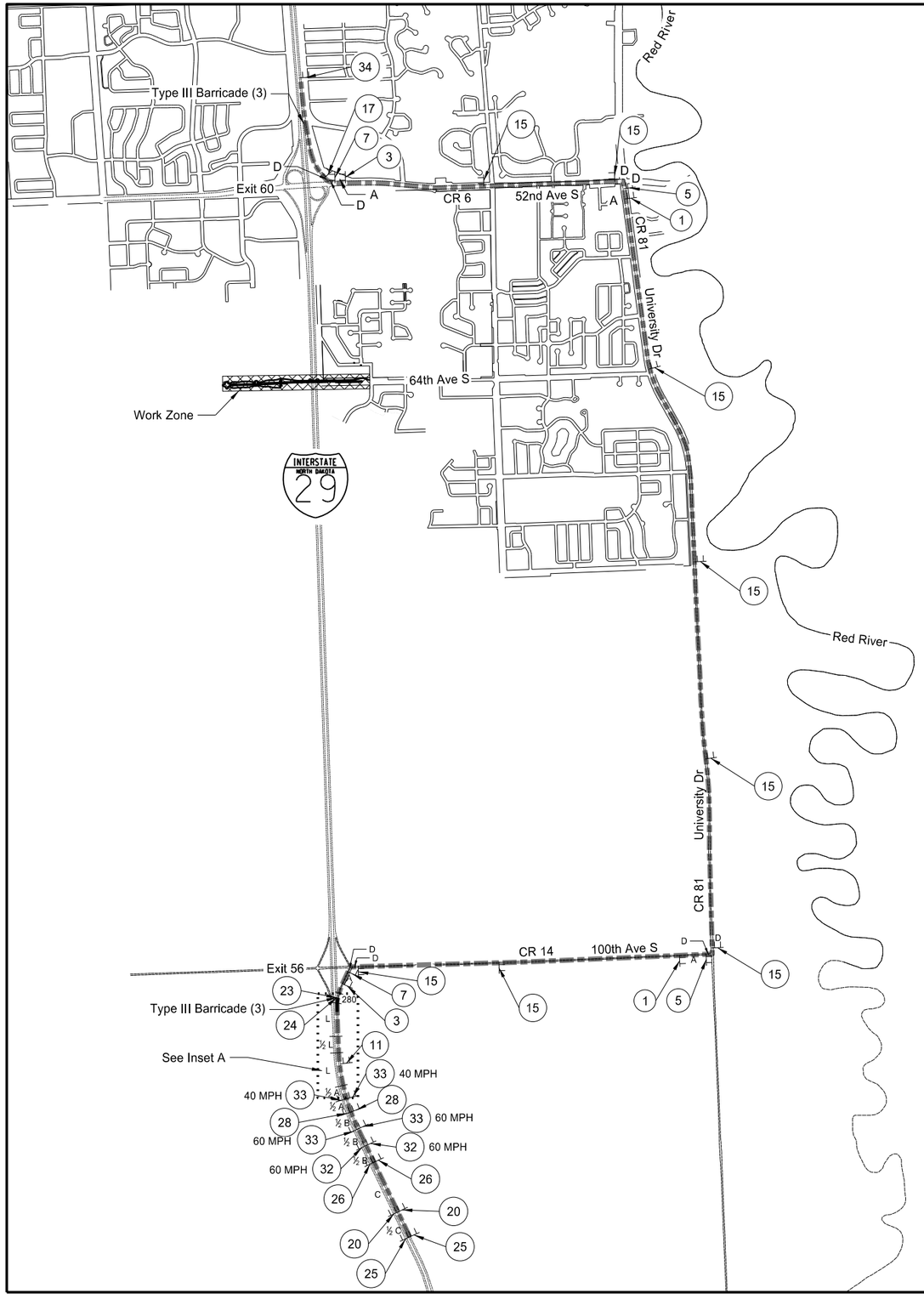
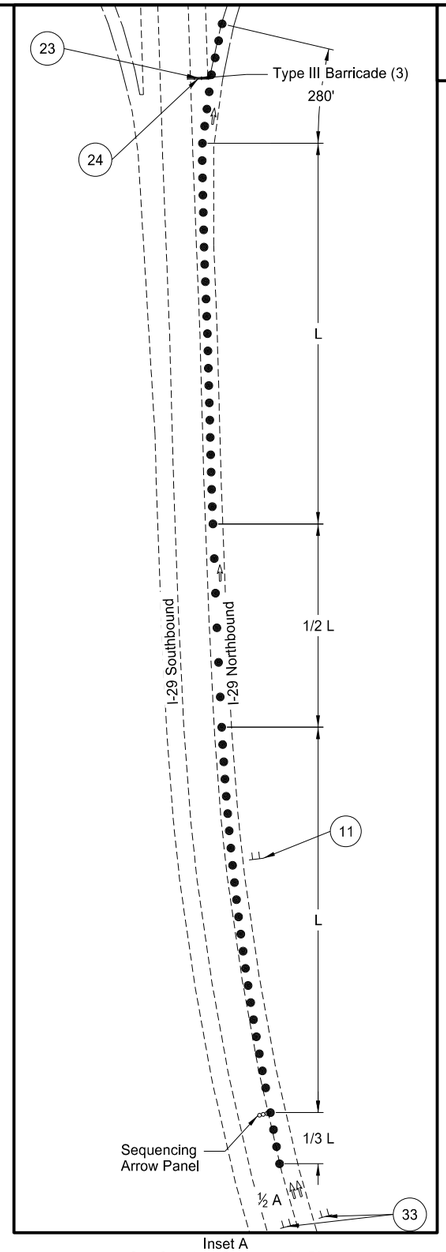




	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	100	4

1	3	5	7
DETOUR M4-8-24 NORTH M3-1-24 INTERSTATE 29 M1-1-24 M5-1L-21	DETOUR M4-8-24 NORTH M3-1-24 INTERSTATE 29 M1-1-24 M5-1R-21	DETOUR M4-8-24 NORTH M3-1-24 INTERSTATE 29 M1-1-24 M6-1L-21	DETOUR M4-8-24 NORTH M3-1-24 INTERSTATE 29 M1-1-24 M6-1R-21
11	**15**	**17**	**20**
DETOUR M4-8-24 NORTH M3-1-24 INTERSTATE 29 M1-1-24 M6-2-21	DETOUR M4-8-24 NORTH M3-1-24 INTERSTATE 29 M1-1-24	NORTH M3-1-24 INTERSTATE 29 M1-1-24	W20-2-48 DETOUR AHEAD
23	**24**	**25**	**26**
M4-10R-48 DETOUR Barricade Mounted	R11-2-48 ROAD CLOSED Barricade Mounted	G20-55-96 SPEED LIMIT ENFORCED MINIMUM FEE $80 WHEN WORKERS PRESENT	W20-5-48 LEFT LANE CLOSED ½ MILE
28	**32**	**33**	**34**
W4-2-48	W3-5-48 SPEED LIMIT XX	R2-1-48 SPEED LIMIT XX	M4-8a-24 END DETOUR

Legend
- Sign
- Type III Barricade
- Delineator Drum
- Sequencing Arrow Panel
- Detour Route

SIGN SPACING NOT DRAWN TO SCALE

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (over 30 mph to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500
D = 100' min to 150' max			
L = S*W S = Numerical value of speed limit or 85th percentile prior to work starting W = The width of the taper			

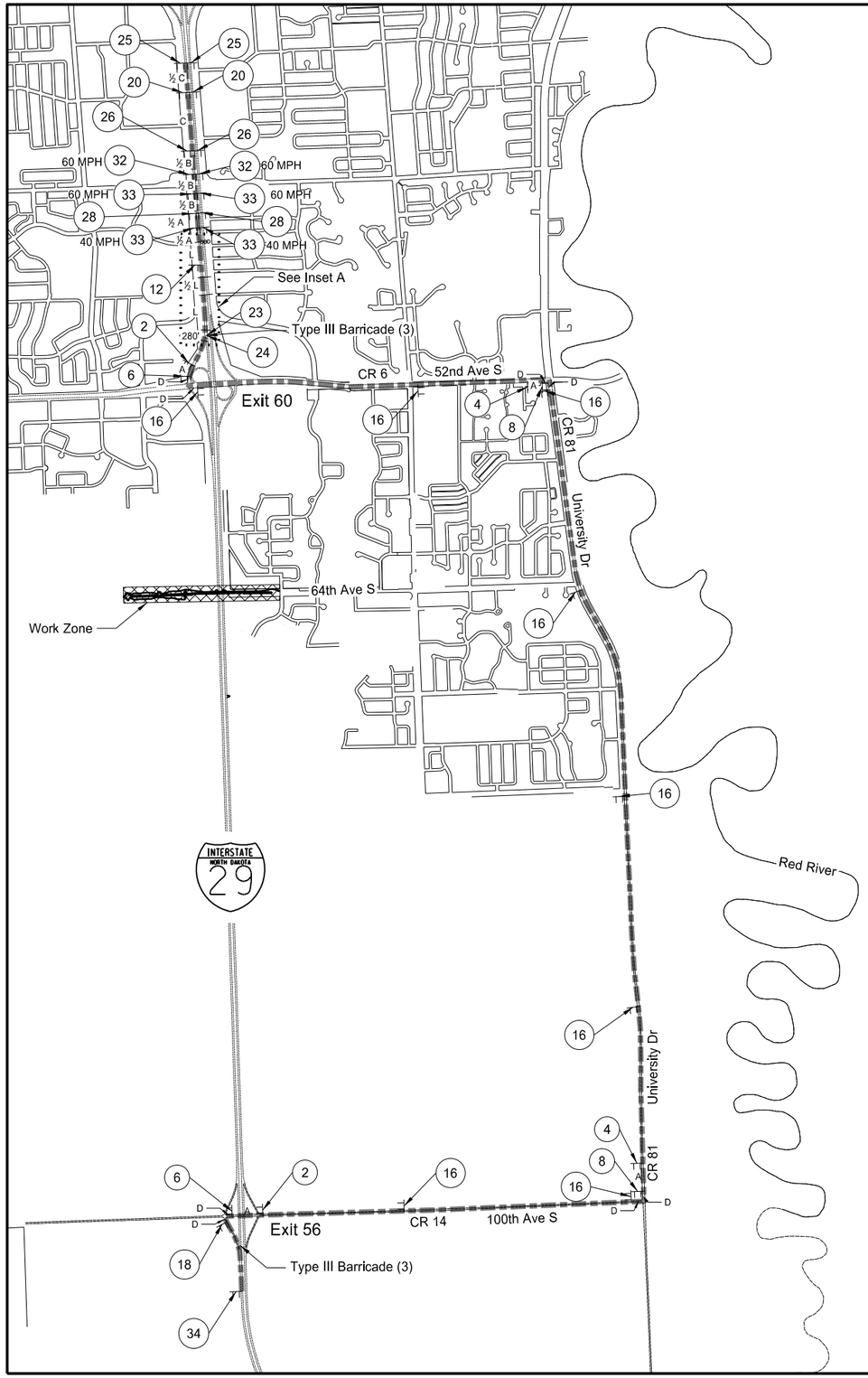
N

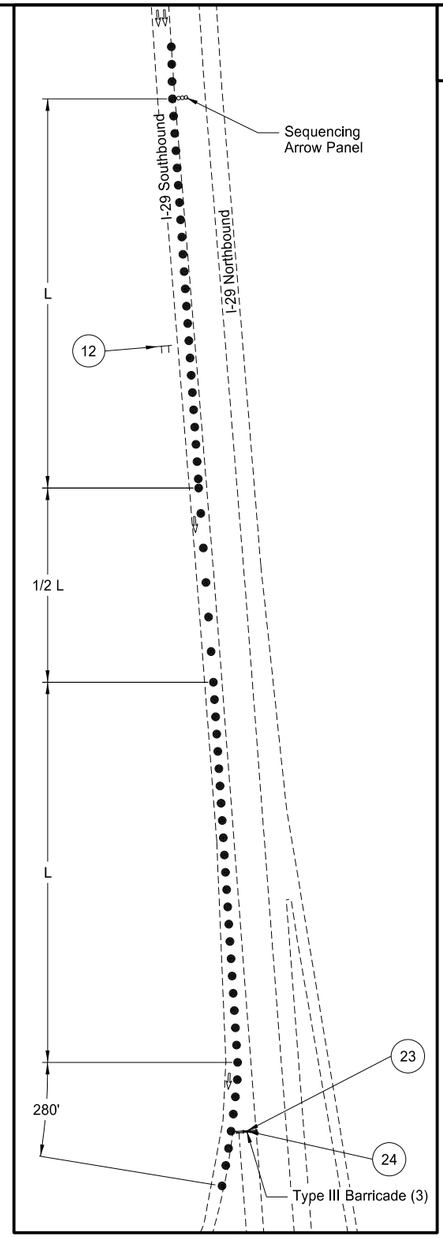
64th Avenue South - 38th St S to 33rd St S

Detour Routes
I-29 Closure - Northbound

64th Avenue South

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	100	5





2	4	6	8
DETOUR M4-8-24 SOUTH M3-3-24 INTERSTATE 29 M1-1-24 M5-1L-21	DETOUR M4-8-24 SOUTH M3-3-24 INTERSTATE 29 M1-1-24 M5-1R-21	DETOUR M4-8-24 SOUTH M3-3-24 INTERSTATE 29 M1-1-24 M6-1L-21	DETOUR M4-8-24 SOUTH M3-3-24 INTERSTATE 29 M1-1-24 M6-1R-21
12	**16**	**18**	**20**
DETOUR M4-8-24 SOUTH M3-3-24 INTERSTATE 29 M1-1-24 M6-2-21	DETOUR M4-8-24 SOUTH M3-3-24 INTERSTATE 29 M1-1-24	SOUTH M3-3-24 INTERSTATE 29 M1-1-24	W20-2-48 DETOUR AHEAD
23	**24**	**25**	**26**
M4-10R-48 DETOUR Barricade Mounted	R11-2-48 ROAD CLOSED Barricade Mounted	G20-55-96 SPEED LIMIT ENFORCED MINIMUM FEE $80 WHEN WORKERS PRESENT	W20-5-48 LEFT LANE CLOSED ½ MILE
28	**32**	**33**	**34**
W4-2L-48	W3-5-48 SPEED LIMIT XX	R2-1-48 SPEED LIMIT XX	M4-8a-24 END DETOUR

Legend
- Sign
- Type III Barricade
- Delineator Drum
- Sequencing Arrow Panel
- Detour Route

SIGN SPACING NOT DRAWN TO SCALE

ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (over 30 mph to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500
D = 100' min to 150' max			
L = S*W S = Numerical value of speed limit or 85th percentile prior to work starting W = The width of the taper			

N

64th Avenue South - 38th St S to 33rd St S

Detour Routes
I-29 Closure - Southbound

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	N.D.	SU-8-984(153)156	110	1

Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	2nd LF	3rd LF	4th LF	Vert Clear-ance FT	Support Size	Max Post Len LF	Sleeve Length 1st LF	2nd LF	3rd LF	4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
104+05	R11-2-48 & W1-7-48			18.0																			Barricade Mounted
104+60 Lt	SS1 & SS2		9.0		8.7				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga				
104+85 Lt	R1-1-30	1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
105+15 Rt	W1-7-48	34		8.0																			Barricade Mounted
105+47 Lt	R1-1-30	1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
109+00 Lt	R3-8b-48	37		10.0	9.2				7.0	2.5 x 2.5 10 ga	11.4						1	4	3 x 3 7 ga			1	
109+64 Rt	R2-1-30	9		5.0					7.0														Mount on Light Standard
112+57	R4-7-30	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
112+66 Lt	SS1 & SS3		9.0		8.7				7.0	2.5 x 2.5 12 ga	10.0						1	4	3 x 3 7 ga				Special Assembly 1E
112+89 Lt	R6-1R-30 & R1-1-30	448		8.2	10.7				7.0	2.5 x 2.5 12 ga	12.5						1	4	3 x 3 7 ga				
113+18 Lt mdn	R6-1R-36 & R3-2-24			7.0	10.2				7.0	2.25 x 2.25 12 ga	10.7						1	4	2.5 x 2.5 12 ga				SA A
113+73 Lt mdn	R4-7-30	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
116+57 Rt	W1-4L-48	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
118+07 Rt	W6-2-36	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
122+08 Lt	W6-1-36	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
123+58 Lt	W1-4L-36	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
133+00 Rt	W1-4R-48	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
134+50 Rt	W6-1-36	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
137+23 Lt	W6-2-36	20		9.0					7.0														Mount on Light Standard
138+73 Lt	W1-4R-36	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
142+86 Lt	R2-1-30	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
Sub Total			18.0	153.6		**Total**	168.8										**Total**	68.0		0	0	8	
Grand Total			**18.0**	**153.6**		**Total**	**168.8**										**Total**	**68**	**0**	**0**	**0**	**8**	

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Sign Summary
Perforated Tube

64th Avenue South - 38th St S to 33rd St S

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	110	2

Spec	Code	Bid Item	Units	3	4	5	6	7	Total White	Total Yellow	Total
754	170	FLEXIBLE DELINEATORS	LF								50
		White	LF	4	6	17	21		48		
		Yellow	LF		2					2	
762	0113	EPOXY PVMT MK 4IN LINE	LF								9,634
		White	LF	112	798	2,002	1,646		4,558		
		Yellow	LF		650	2,142	2,284			5,076	
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF								128
		White	SF	64	32			32	128		
762	1104	PVMT MK PAINTED 4IN LINE	SF								132
		White	SF	132					132		
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF								725
		White	LF	425	100			200	725		
762	1317	PREFORMED PATTERNED PVMT MK 16IN LINE-GROOVED	LF								68
		White	LF	68					68		
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF								6,552
		Yellow	LF	1,250	3,442		640	1,199		6,531	
		White	LF	21					21		

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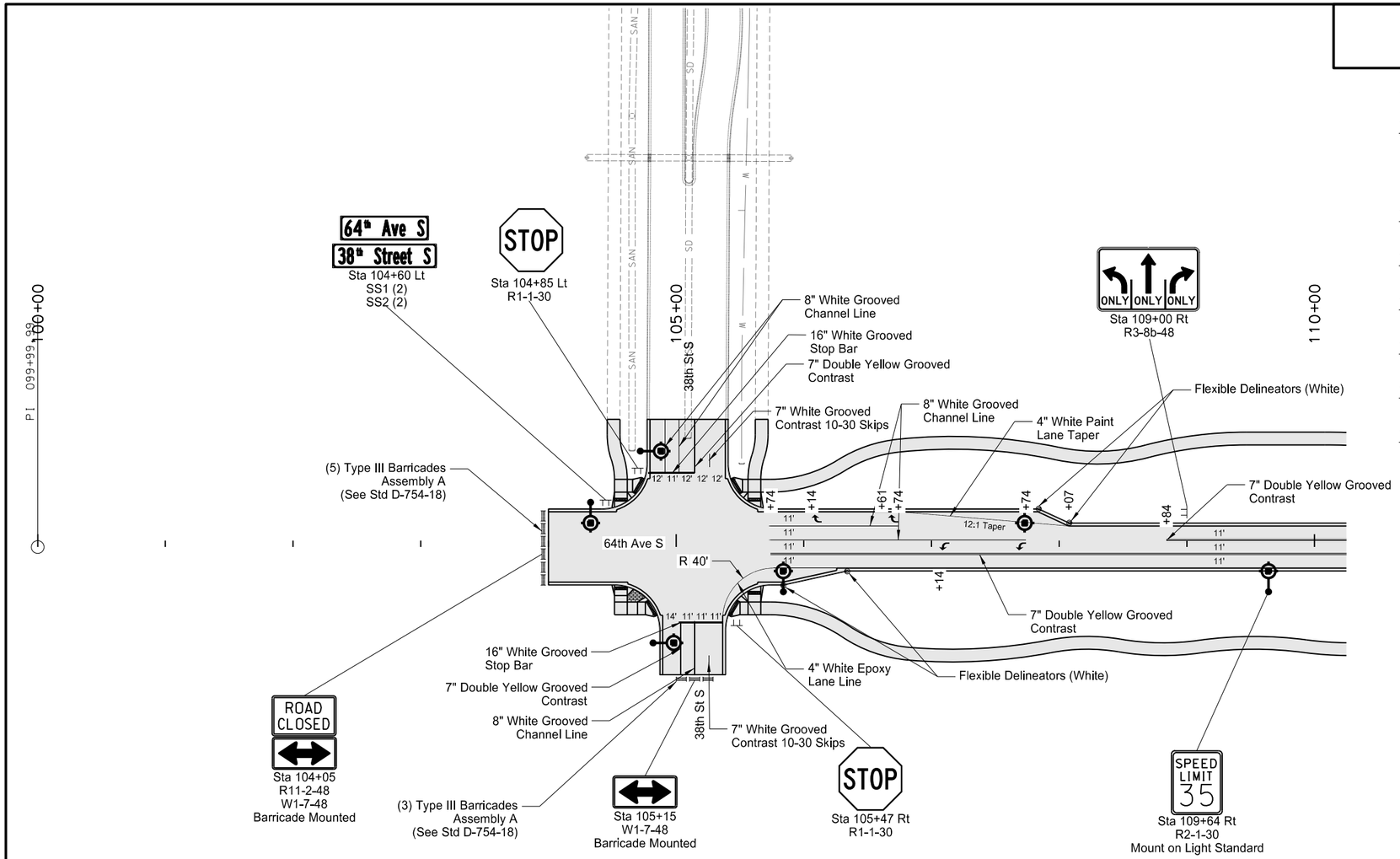
64th Avenue South - 38th St S to 33rd St S

Pavement Marking Summary

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	110	3

SPEC	CODE	BID ITEM	QTY	UNIT
754	0170	FLEXIBLE DELINEATORS		
		Sta 105+84.00 - 30.0' RT (White)	1	EA
		Sta 106+34.00 - 19.0' RT (White)	1	EA
		Sta 107+84.00 - 30.0' LT (White)	1	EA
		Sta 108+08.00 - 19.0' LT (White)	1	EA
762	0113	EPOXY PVMT MK 4IN LINE		
		Lane Line (White)	112	LF
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		2 Left Turn Arrow & 2 Right Turn Arrow	64	SF
762	1104	PVMT MK PAINTED 4IN LINE		
		Lane Taper (White)	132	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		White Channel Lines	425	LF
762	1317	PREFORMED PATTERNED PVMT MK 16IN LINE-GROOVED		
		Stop Bars	68	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Double NPZ (Yellow)	1,250	LF
		10-30 Skips (White)	21	LF



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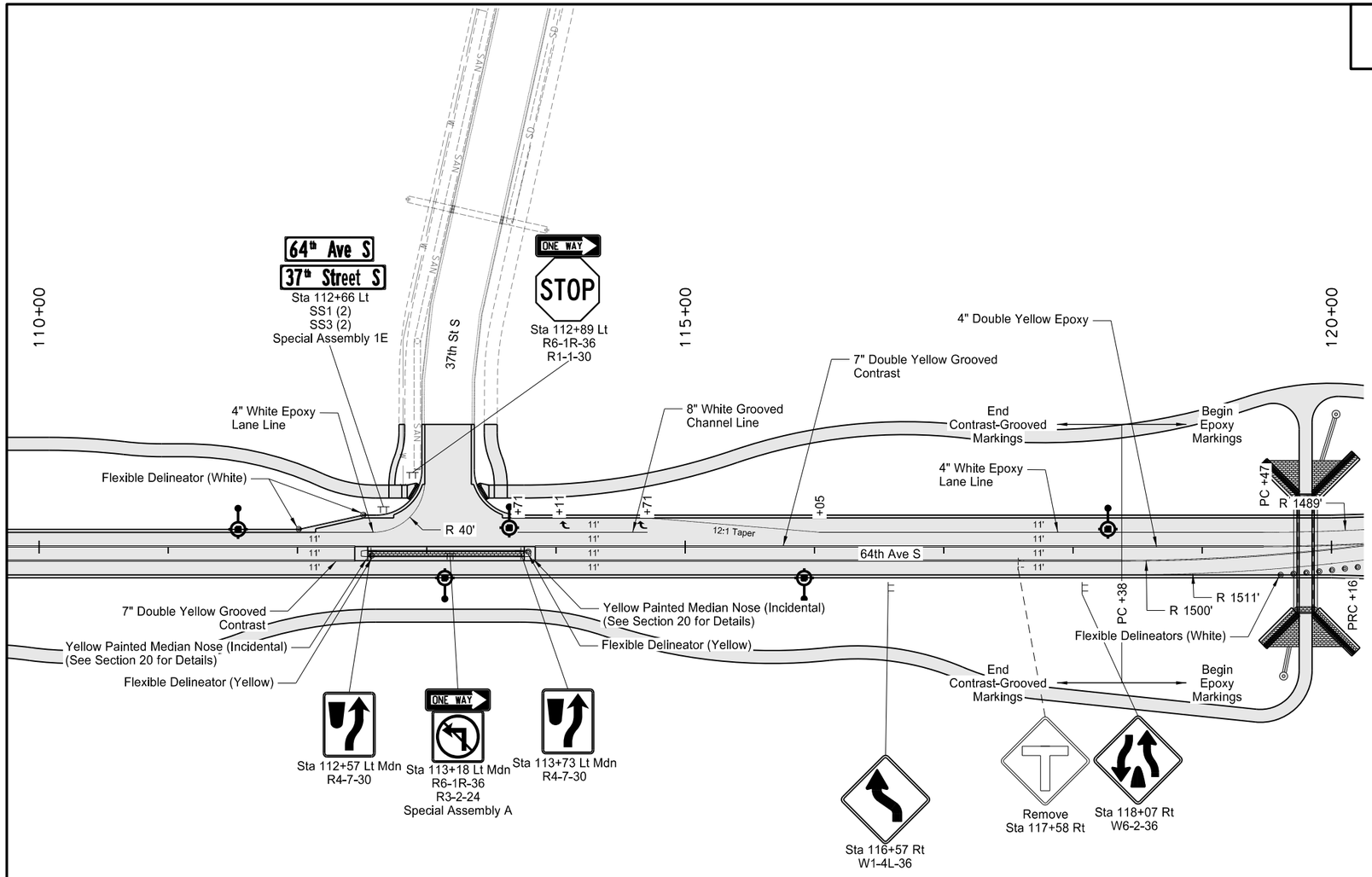
64th Avenue South - 38th St S to 33rd St S

Signing & Pavement Marking

64th Avenue South
Sta 100+00 to 110+00 (PR 64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	110	4

SPEC	CODE	BID ITEM	QTY	UNIT
754	0170	FLEXIBLE DELINEATORS		
		Sta 112+01.00 - 19.0' LT (White)	1	EA
		Sta 112+51.00 - 30.0' LT (White)	1	EA
		Sta 112+57.05 - 2.5' RT (Yellow)	1	EA
		Sta 113+76.50 - 2.5' LT (Yellow)	1	EA
		Sta 119+60.68 - 16.5' RT (White)	1	EA
		Sta 119+70.63 - 15.7' RT (White)	1	EA
		Sta 119+80.58 - 14.7' RT (White)	1	EA
		Sta 119+90.52 - 13.8' RT (White)	1	EA
762	0113	EPOXY PVMT MK 4IN LINE		
		Lane Line (White)	798	LF
		Double NPZ (Yellow)	650	LF
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		2 Right Turn Arrow	32	SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		White Channel Line	100	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Double NPZ (Yellow)	3,442	LF



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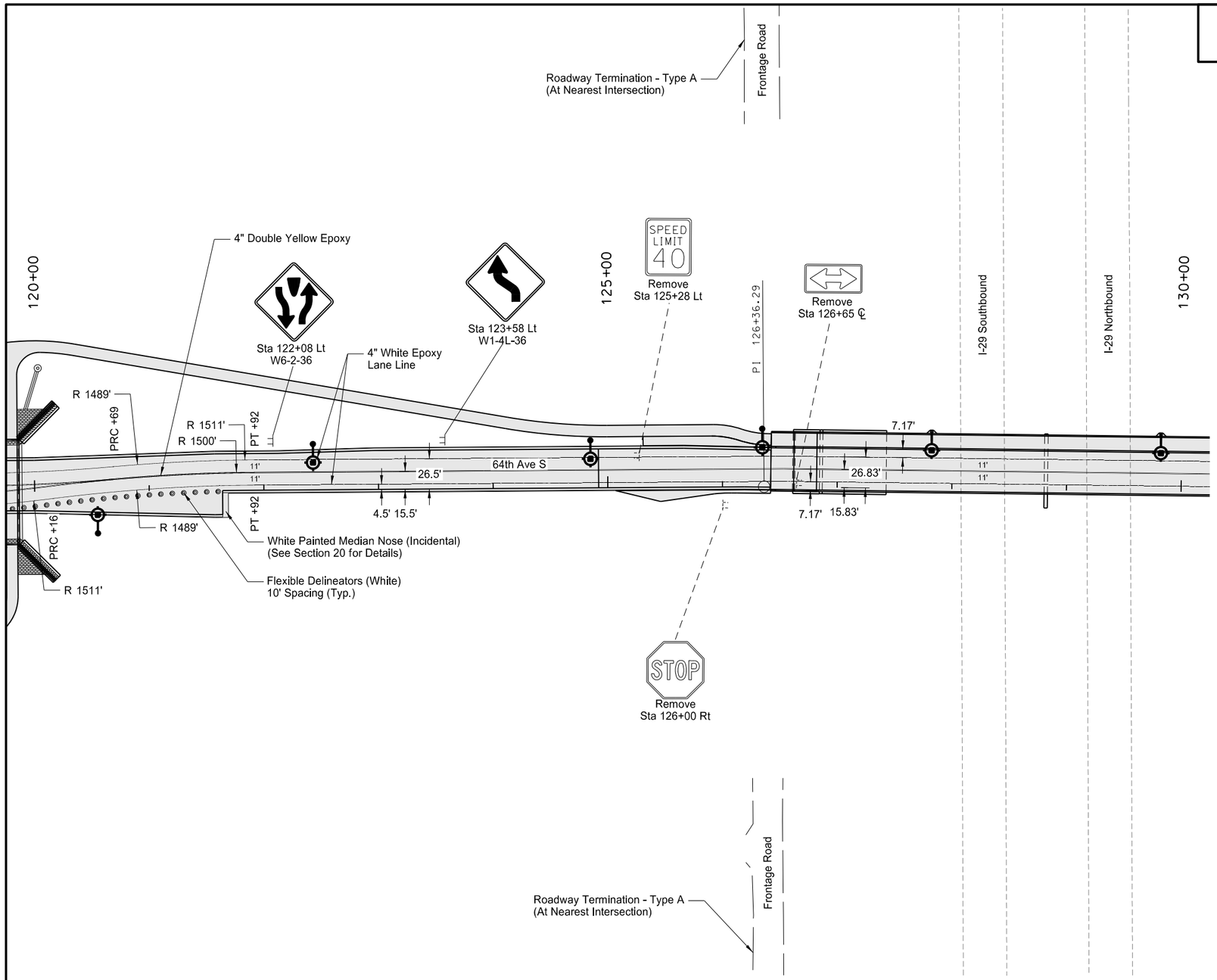
64th Avenue South - 38th St S to 33rd St S

Signing & Pavement Marking

64th Avenue South
Sta 110+00 to 120+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	110	5



SPEC	CODE	BID ITEM	QTY	UNIT
754	0170	FLEXIBLE DELINEATORS		
		Sta 120+00.45 - 12.7' RT (White)	1	EA
		Sta 120+10.37 - 11.6' RT (White)	1	EA
		Sta 120+20.30 - 10.5' RT (White)	1	EA
		Sta 120+30.25 - 9.3' RT (White)	1	EA
		Sta 120+40.21 - 8.3' RT (White)	1	EA
		Sta 120+50.17 - 7.3' RT (White)	1	EA
		Sta 120+60.15 - 6.4' RT (White)	1	EA
		Sta 120+70.12 - 5.5' RT (White)	1	EA
		Sta 120+80.11 - 4.7' RT (White)	1	EA
		Sta 120+90.09 - 4.0' RT (White)	1	EA
		Sta 121+00.09 - 3.4' RT (White)	1	EA
		Sta 121+10.08 - 2.8' RT (White)	1	EA
		Sta 121+20.08 - 2.2' RT (White)	1	EA
		Sta 121+30.09 - 1.8' RT (White)	1	EA
		Sta 121+40.09 - 1.4' RT (White)	1	EA
		Sta 121+50.10 - 1.1' RT (White)	1	EA
		Sta 121+60.11 - 0.8' RT (White)	1	EA
754	0137	ROADWAY TERMINATION-TYPE A		
		Frontage Road	2	EA
762	0113	EPOXY PVMT MK 4IN LINE		
		Lane Line (White)	2,002	LF
		Double NPZ (Yellow)	2,142	LF

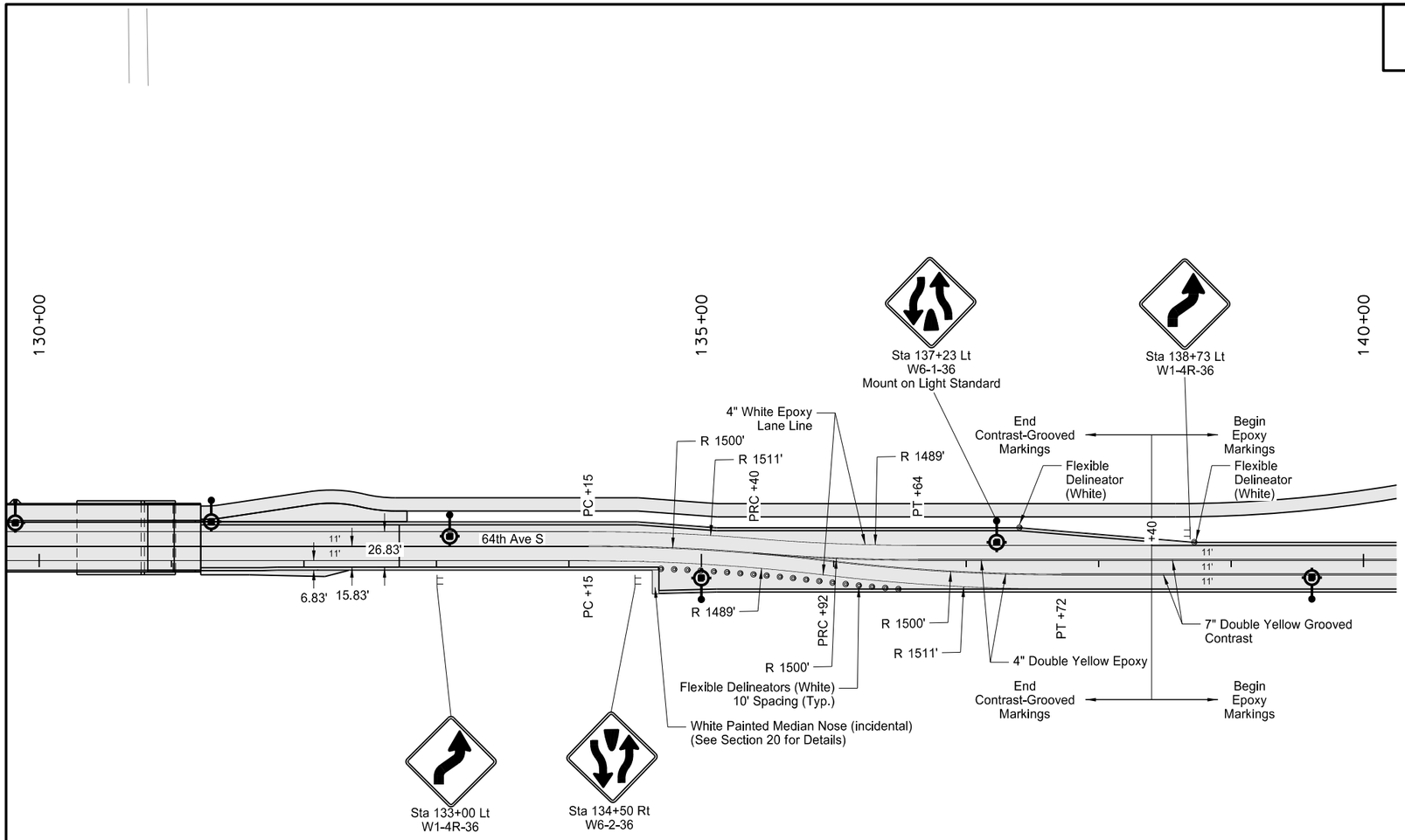
N

64th Avenue South - 38th St S to 33rd St S

Signing & Pavement Marking

64th Avenue South
Sta 120+00 to 130+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	110	6



SPEC	CODE	BID ITEM	QTY	UNIT
754	0170	FLEXIBLE DELINEATORS		
		Sta 134+69.52 - 1.2' RT (White)	1	EA
		Sta 134+79.51 - 1.6' RT (White)	1	EA
		Sta 134+89.50 - 2.1' RT (White)	1	EA
		Sta 134+99.49 - 2.6' RT (White)	1	EA
		Sta 135+09.47 - 3.2' RT (White)	1	EA
		Sta 135+19.45 - 3.9' RT (White)	1	EA
		Sta 135+29.42 - 4.6' RT (White)	1	EA
		Sta 135+39.39 - 5.4' RT (White)	1	EA
		Sta 135+49.35 - 6.3' RT (White)	1	EA
		Sta 135+59.31 - 7.2' RT (White)	1	EA
		Sta 135+69.25 - 8.2' RT (White)	1	EA
		Sta 135+79.20 - 9.3' RT (White)	1	EA
		Sta 135+89.13 - 10.5' RT (White)	1	EA
		Sta 135+99.06 - 11.6' RT (White)	1	EA
		Sta 136+09.00 - 12.7' RT (White)	1	EA
		Sta 136+18.95 - 13.8' RT (White)	1	EA
		Sta 136+28.90 - 14.7' RT (White)	1	EA
		Sta 136+38.86 - 15.7' RT (White)	1	EA
		Sta 136+48.82 - 16.5' RT (White)	1	EA
		Sta 137+40.21 - 30.0' LT (White)	1	EA
		Sta 138+72.21 - 19.0' LT (White)	1	EA
762	0113	EPOXY PVMT MK 4IN LINE		
		Lane Line (White)	1,646	LF
		Double NPZ (Yellow)	2,284	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Double NPZ (Yellow)	640	LF

N

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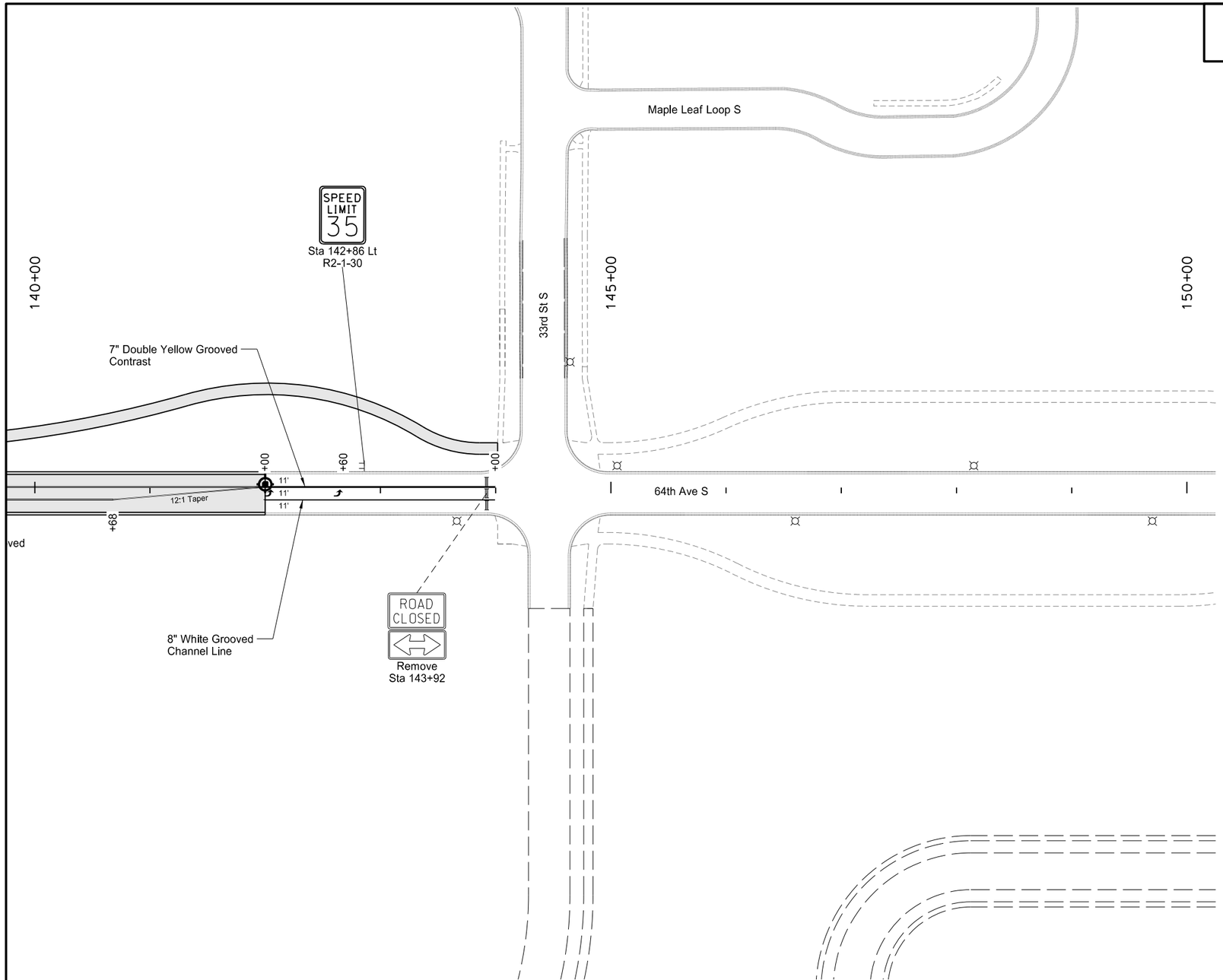
64th Avenue South - 38th St S to 33rd St S

Signing & Pavement Marking

64th Avenue South
Sta 130+00 to 140+00 (PR64)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	110	7

SPEC	CODE	BID ITEM	QTY	UNIT
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		2 Left Turn Arrow	32	SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		White Channel Line	200	LF
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED		
		Double NPZ (Yellow)	1,199	LF



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64th Avenue South - 38th St S to 33rd St S

Signing & Pavement Marking

64th Avenue South
Sta 140+00 to 150+00 (PR64)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	110	8

SIGN NUMBER	SS1
WIDTH X HEIGHT	2'-9" x 0'-9"
BORDER WIDTH	0.5" (inset 0")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
104+60 Lt (2)
112+66 Lt (2)

AREA: 2.1 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_StreetName_Fargo.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
t	h																		2.2	3/2.3	B 2000
8.9	10																				
6	4																		6.3	6	B 2000
1.6	4.9																				
A	v	e																	8.8	6/4.5	B 2000
15.6	19.1	22.1																			
S																			2.6	6	B 2000
28.9																					

SIGN NUMBER	SS2
WIDTH X HEIGHT	3'-3" x 0'-9"
BORDER WIDTH	0.5" (inset 0")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
104+60 Lt (2)

AREA: 2.4 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Street Name.ssl

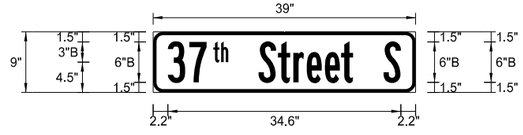
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
t	h																		2.2	3/2.3	B 2000
9	10.1																				
3	8																		5.8	6	B 2000
2.2	5.4																				
S	t	r	e	e	t														14	6/4.5	B 2000
15.7	18.6	20.8	22.8	25.5	27.9																
S																			2.6	6	B 2000
34.2																					

SIGN NUMBER	SS3
WIDTH X HEIGHT	3'-3" x 0'-9"
BORDER WIDTH	0.5" (inset 0")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
112+66 Lt (2)

AREA: 2.4 Sq.Ft.

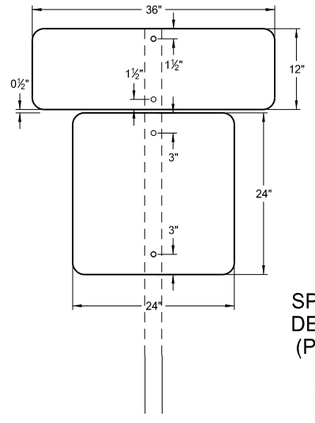


Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Street Name.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
t	h																		2.2	3/2.3	B 2000
9	10.1																				
3	7																		5.8	6	B 2000
2.2	5.4																				
S	t	r	e	e	t														14	6/4.5	B 2000
15.7	18.6	20.8	22.8	25.5	27.9																
S																			2.6	6	B 2000
34.2																					



SPECIAL ASSEMBLY A
DESIGN AREA = 7.0 SF
(PERFORMATED TUBE)

Sta 113+18 (PR64)

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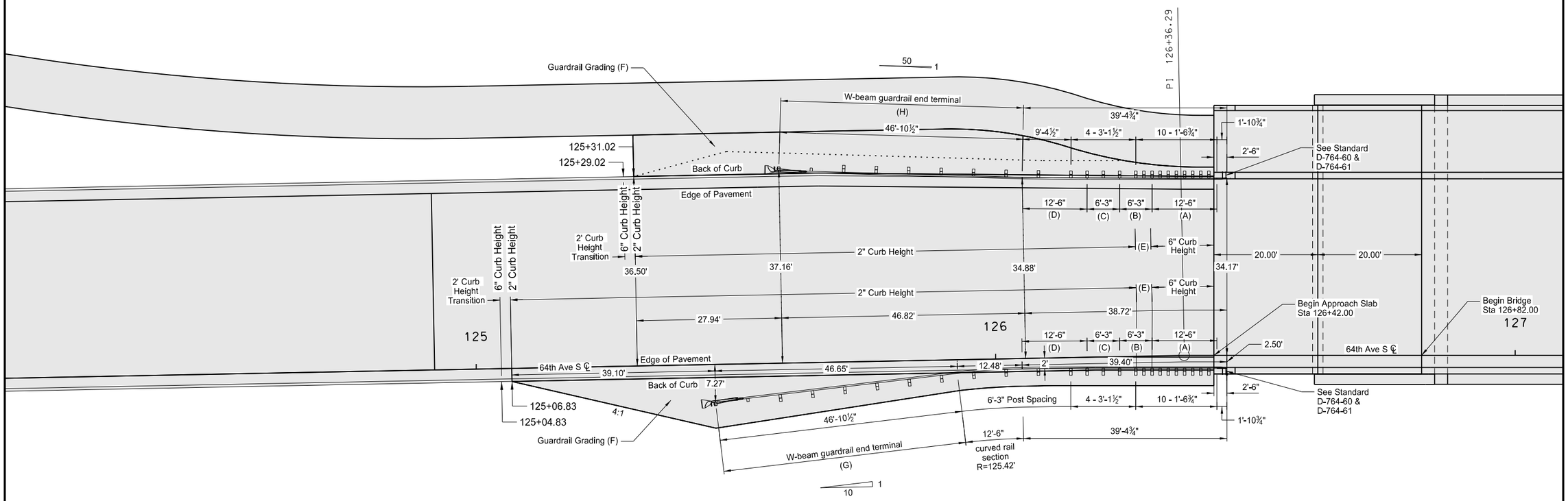
64th Avenue South - 38th St S to 33rd St S

Sign Details

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	130	1

23 USC § 409 Documents
NDDOT Reserves All Objections



(A) Thrie beam double rail section (12 Gauge).

(B) Thrie beam (12 Gauge).

(C) Non-Symmetrical transition to W-Beam (10 Gauge).

(D) Double rail section. See note (B) on D-764-60.

(E) Transition from 2" curb height to 6" curb height.

(F) Surface this area with 2" HMA and 6" aggregate base course. See Section 90 for paving quantities. See Standard D-764-48 for additional grading details.

(G) Install a MGS FLEAT end terminal at this location (Standard D-764-38). Use flare shown on this detail.

(G) Install a Sequential Kinking or SoftStop end terminal at this location (Standard D-764-51 and D-764-50). Use flare shown on this detail.

Note:
Coordinate with Geofoam installer to avoid damage to geofoam and geomembrane during guardrail installation.

N

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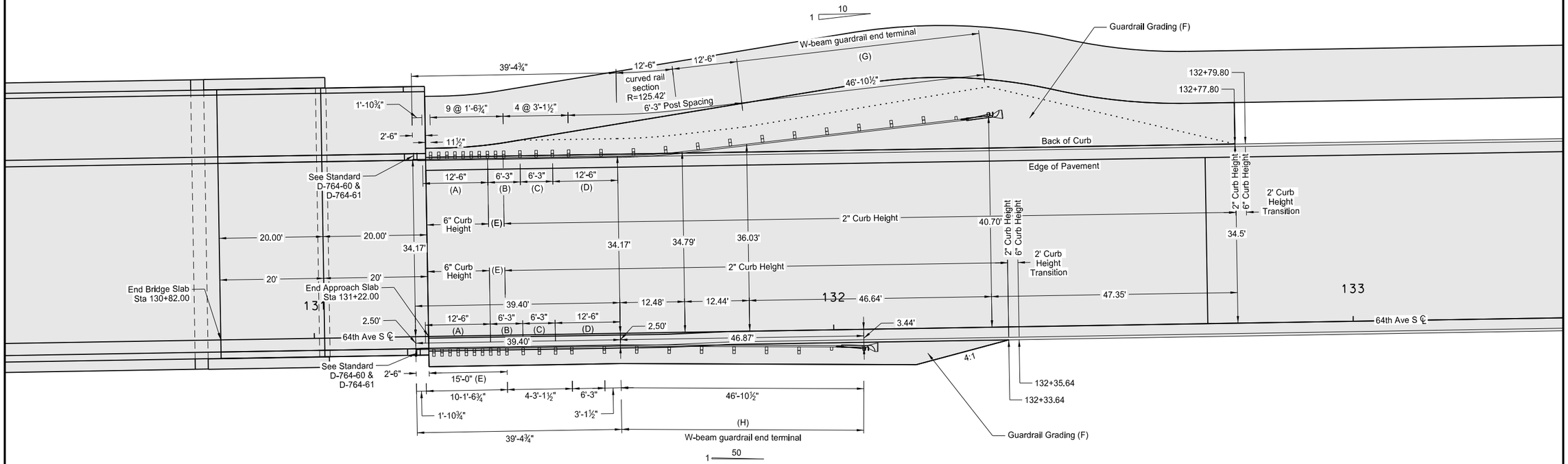
Thrie W-Beam Guardrail Layout

64th Avenue South Eastbound
Strcuture 0029-059.264

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	130	2

23 USC § 409 Documents
NDDOT Reserves All Objections



(A) Thrie beam double rail section (12 Gauge).

(B) Thrie beam (12 Gauge).

(C) Non-Symmetrical transition to W-Beam (10 Gauge).

(D) Double rail section. See note (B) on D-764-60.

(E) Transition from 2" curb height to 6" curb height.

(F) Surface this area with 2" HMA and 6" aggregate base course. See Section 90 for paving quantities. See Standard D-764-48 for additional grading details.

(G) Install a MGS FLEAT end terminal at this location (Standard D-764-38). Use flare shown on this detail.

(G) Install a Sequential Kinking or SoftStop end terminal at this location (Standard D-764-51 and D-764-50). Use flare shown on this detail.

Note:
Coordinate with Geofoam installer to avoid damage to geofoam and geomembrane during guardrail installation.

N

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Thrie W-Beam Guardrail Layout

64th Avenue South Westbound
Structure 0029-059.264

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	130	3

23 USC § 409 Documents
NDDOT Reserves All Objections

SPEC	CODE	BID ITEM	QTY	UNIT
764	0131	W-BEAM GUARDRAIL		
		Sta 125+92.58 to 126+44.50 Rt	51.9	LF
		Sta 126+05.78 to 126+44.50 Lt	39.4	LF
		Sta 131+19.50 to 131+83.81 Lt	64.4	LF
		Sta 131+19.50 to 131+58.90 Rt	39.4	LF
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 125+45.93 to 125+92.58 Rt	1	EA
		Sta 125+58.96 to 126+05.78 Lt	1	EA
		Sta 131+83.81 to 132+30.48 Lt	1	EA
		Sta 131+58.90 to 132+05.77 Rt	1	EA

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES

MGS THRIE/W-BEAM GUARDRAIL AT BRIDGE ENDS

LOCATION	(A) 2'-6" THRIE BEAM TERMINAL CONNECTOR	(A) SINGLE SLOPE TO THRIE BEAM CONNECTOR PLATE	(A) 5/8" x 18" LONG GUARDRAIL BOLT	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 6" x 8" x 7'-0" TIMBER POST	(A) 6" x 8" x 19" WOOD TIMBER BLOCK	(A) 6" x 8" x 14" WOOD TIMBER BLOCK	(A) 5/8" x 1-1/4" LONG GUARDRAIL BOLT	(A) 12'-6" DOUBLE THRIE BEAM SECTION	(A) 6'-3" THRIE BEAM SECTION (12 GUAGE)	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" DOUBLE W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) 6'-3" NON-SYMMETRICAL W-THRIE BEAM TRANSITION SECTION	(A) 3/4" x 2-1/2" LONG POST BOLT	(A) 7/8" x 15" LONG HEX HEAD BOLT	(A) REFLECT-ORIZED PLATES
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Sta 125+45.93 to Sta 126+44.5 (RT)	1	1	34	17	6	12	11	56	1	1	0	1	1	1	2	5	5
Sta 126+05.78 to Sta 126+44.50 (LT)	1	1	32	15	6	12	9	32	1	1	0	1	0	1	2	5	4
Sta 131+19.50 to Sta 132+30.48 (LT)	1	1	36	19	6	12	13	64	1	1	1	1	1	1	2	5	5
Sta 131+19.50 to Sta 132+05.77 (RT)	1	1	32	15	6	12	9	32	1	1	0	1	0	1	2	5	4
TOTAL	4	4	134	66	24	48	42	184	4	4	1	4	2	4	8	20	18

(A) Include these items in the contract unit price for "W-BEAM GUARDRAIL".

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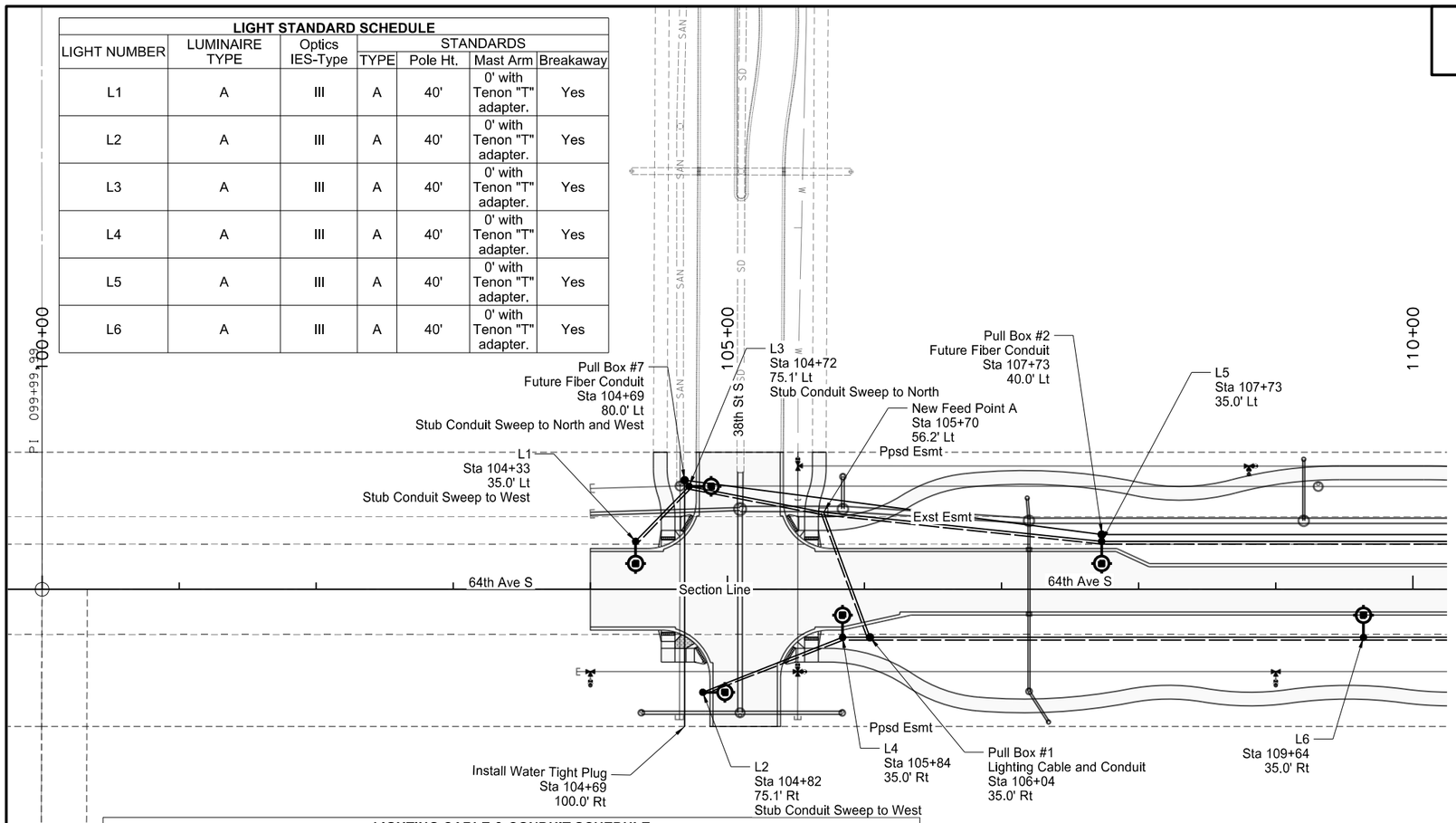
Thrie W-Beam Guardrail Quantities

64th Avenue South Overpass
Bridge 0029-059.264

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	140	1

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	LUMINAIRE TYPE	Optics IES-Type	STANDARDS			
			TYPE	Pole Ht.	Mast Arm	Breakaway
L1	A	III	A	40'	0' with Tenon "T" adapter.	Yes
L2	A	III	A	40'	0' with Tenon "T" adapter.	Yes
L3	A	III	A	40'	0' with Tenon "T" adapter.	Yes
L4	A	III	A	40'	0' with Tenon "T" adapter.	Yes
L5	A	III	A	40'	0' with Tenon "T" adapter.	Yes
L6	A	III	A	40'	0' with Tenon "T" adapter.	Yes



LIGHTING CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN		CIRCUIT
		TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE	
Feed Point A to Light L3	Sta 105+74, 56.2' Lt to Sta 104+72, 75.1' Lt	100	1.5"	228 114	(2) Underground Conductor No. 6 RHW/USE (1) Underground Conductor No.6 USE (Ground)	C1
Light L3 to Light L1	Sta 104+72, 75.1' Lt to Sta 104+33, 35.0' Lt	56	1.5"	128 64	(2) Underground Conductor No. 6 RHW/USE (1) Underground Conductor No.6 USE (Ground)	C1
Feed Point A to	Sta 105+74, 56.2' Lt to	97	1.5"	226 113	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C2
Pull Box #1	Sta 106+04, 35.0' Rt			226 113	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C4
Pull Box #1 to Light L4	Sta 106+04, 35.0' Rt to Sta 105+84, 35.0' Rt	20	1.5"	60 30	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C2
Light L4 to Light L2	Sta 105+84, 35.0' Rt to Sta 104+82, 75.1' Rt	110	1.5"	236 118	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C2
Pull Box #1 to Light L6	Sta 106+04, 35.0' Rt to Sta 109+64, 35.0' Rt	360	1.5"	740 370	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C4
Feed Point A to	Sta 105+74, 56.2' Lt to	204	2"	436 218	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3
Light L5	Sta 107+73, 35.0' Lt			436 218	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C5
Light L5 to	Sta 107+73, 35.0' Lt to	381	2"	778 389	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3
Light L7	Sta 111+54, 35.0' Lt			778 389	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C5
Light L6 to Light L8	Sta 109+64, 35.0' Rt to Sta 113+14, 35.0' Rt	350	1.5"	716 358	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C4

FUTURE FIBER CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN
		TOTAL	SIZE (IN)	SIZE/TYPE
Begin Fiber Conduit to Pull Box #7	Sta 104+69, 100.0' Rt to Sta 104+69, 80.0' Lt	180	2"	Empty Conduit with Tracer Wire
Pull Box #7 to Pull Box #2	Sta 104+69, 80.0' Lt to Sta 107+73, 40.0' Lt	307	2"	Empty Conduit with Tracer Wire
Pull Box #2 to Pull Box #3	Sta 107+73, 40.0' Lt to Sta 116+52, 40.0' Lt	879	2"	Empty Conduit with Tracer Wire

N

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64th Avenue South - 38th St S to 33rd St S

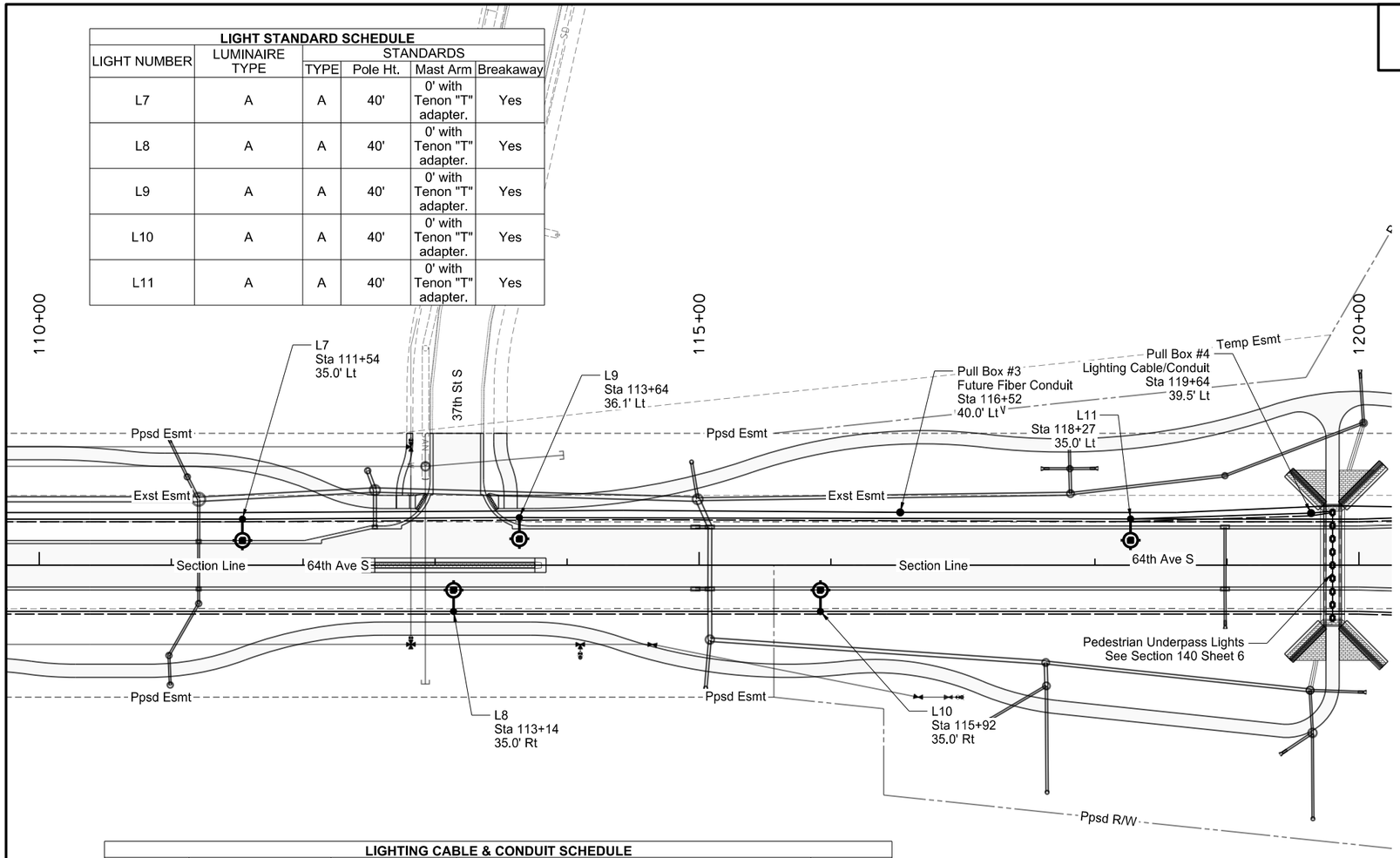
Lighting

64th Avenue South
Sta 100+00 to Sta 110+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	140	2

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	LUMINAIRE TYPE	STANDARDS			
		TYPE	Pole Ht.	Mast Arm	Breakaway
L7	A	A	40'	0' with Tenon "T" adapter.	Yes
L8	A	A	40'	0' with Tenon "T" adapter.	Yes
L9	A	A	40'	0' with Tenon "T" adapter.	Yes
L10	A	A	40'	0' with Tenon "T" adapter.	Yes
L11	A	A	40'	0' with Tenon "T" adapter.	Yes



LIGHTING CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN		CIRCUIT
		TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE	
Light L7 to Light L9	Sta 111+54, 35.0' Lt to Sta 113+64, 36.1' Lt	210	2"	436 218	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3
				436 218	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C5
Light L8 to Light L10	Sta 113+14, 35.0' Rt to Sta 115+92, 35.0' Rt	278	1.5"	572 286	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C4
Light L9 to Light L11	Sta 113+64, 36.1' Lt to Sta 118+27, 35.0' Lt	463	2"	942 471	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3
				942 471	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C5
Light L10 to Light L12	Sta 115+92, 35.0' Rt to Sta 120+55, 36.6' Rt	408	1.5"	832 416	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C4
Light L11 to Pull Box #4	Sta 118+27, 35.0' Lt to Sta 119+64, 39.5' Lt	137	1.5"	294 147	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C5
Pull Box #4 to Pedestrian Underpass	Sta 119+64, 39.5' Lt to See Section 140 Sheet 6	17	1"	54 27	(2) Underground Conductor No. 10 RHW/USE Underground Conductor No.10 USE (Ground)	C5
Light L11 to Light L13	Sta 118+27, 35.0' Lt to Sta 122+43, 40.0' Lt	416	1.5"	848 424	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3

FUTURE FIBER CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN
		TOTAL	SIZE (IN)	SIZE/TYPE
Pull Box #3 to Pull Box #5	Sta 116+52, 40.0' Lt to Sta 124+00, 43.5' Lt	748	2"	Empty Conduit with Tracer Wire

N

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64th Avenue South - 38th St S to 33rd St S

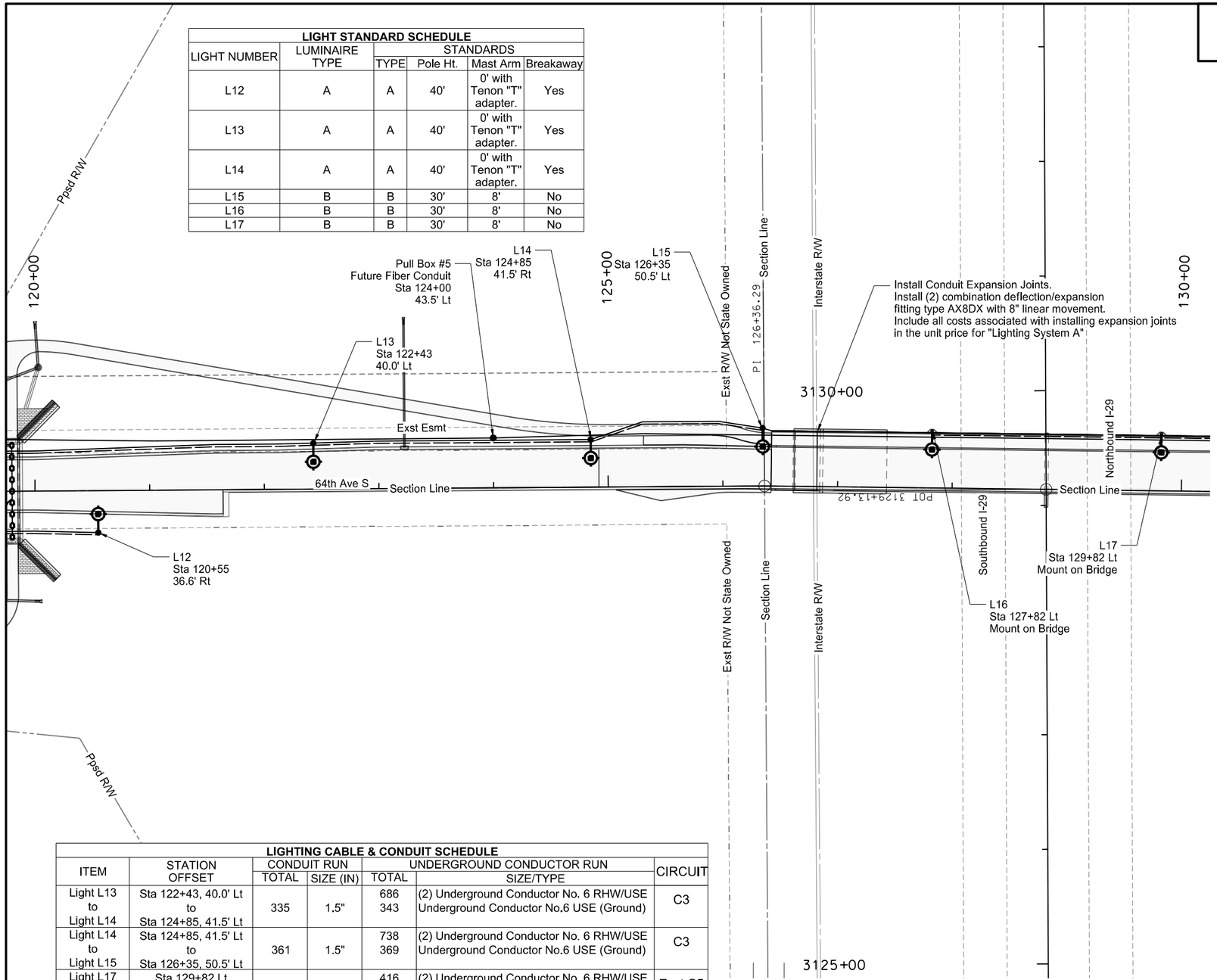
Lighting

64th Avenue South
Sta 110+00 to Sta 120+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	140	3

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	LUMINAIRE TYPE	STANDARDS			
		TYPE	Pole Ht.	Mast Arm	Breakaway
L12	A	A	40'	0' with Tenon "T" adapter.	Yes
L13	A	A	40'	0' with Tenon "T" adapter.	Yes
L14	A	A	40'	0' with Tenon "T" adapter.	Yes
L15	B	B	30'	8'	No
L16	B	B	30'	8'	No
L17	B	B	30'	8'	No



LIGHTING CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN		CIRCUIT
		TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE	
Light L13 to Light L14	Sta 122+43, 40.0' Lt to Sta 124+85, 41.5' Lt	335	1.5"	686 343	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3
Light L14 to Light L15	Sta 124+85, 41.5' Lt to Sta 126+35, 50.5' Lt	361	1.5"	738 369	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	C3
Light L17 to Light L16	Sta 129+82 Lt to Sta 127+82 Lt	200	1.5"	416 208	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C5
Light L18 to Light L17	Sta 131+30, 50.5' Lt to Sta 129+82 Lt	173	1.5"	362 181	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C5
Light L15 to Light L16	Sta 126+35, 50.5' Lt to Sta 127+82 Lt	148	1.5"		Empty Conduit with Pull String	

FUTURE FIBER CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
		TOTAL	SIZE (IN)		SIZE/TYPE
Pull Box #5 to Pull Box #6	Sta 124+00, 43.5' Lt to Sta 135+65, 41.5' Lt	968	2"		Empty Conduit with Tracer Wire

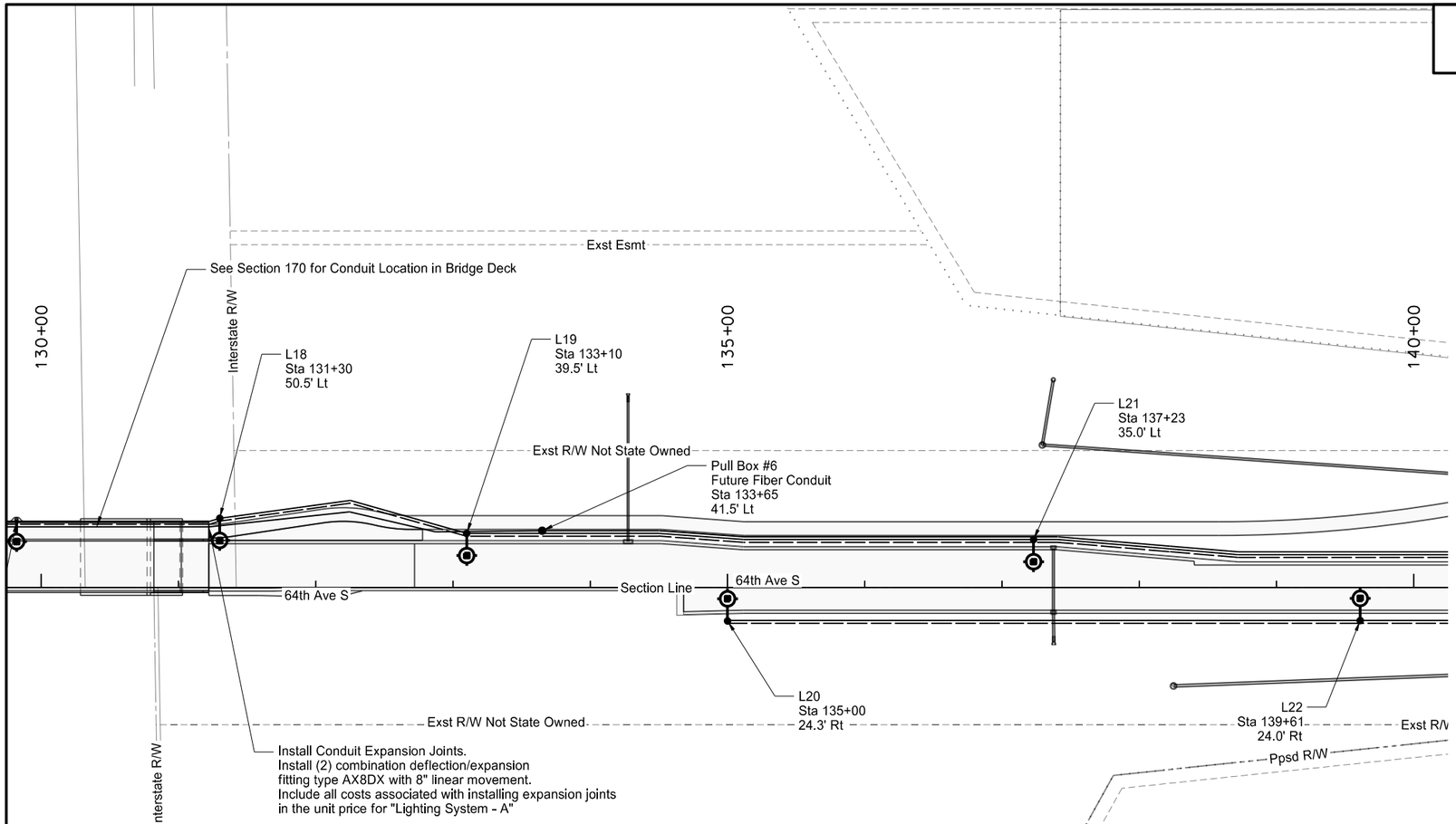
N

64th Avenue South - 38th St S to 33rd St S

Lighting

64th Avenue South
Sta 120+00 to Sta 130+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	140	4



LIGHTING CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN TOTAL	CONDUIT RUN SIZE (IN)	UNDERGROUND CONDUCTOR RUN TOTAL	UNDERGROUND CONDUCTOR RUN SIZE/TYPE	CIRCUIT
Existing Light to Light L22	Sta 143+66, 24.0' Rt to Sta 139+61, 24.0' Rt	405	1.5"	826 413	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C4
Light L23 to LIght L21	Sta 142+00, 24.0' Lt to Sta 137+23, 35.0' Lt	477	1.5"	970 485	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C5
Light L21 to Light L19	Sta 137+23, 35.0' Lt to Sta 133+10, 39.5' Lt	413	1.5"	842 421	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C5
Light L22 to Light L20	Sta 139+61, 24.0' Rt to Sta 135+00, 24.3' Rt	461	1.5"	938 469	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C4
Light L19 to Light L18	Sta 133+10, 39.5' Lt to Sta 131+30, 50.5' Lt	184	1.5"	384 192	(2) Underground Conductor No. 6 RHW/USE Underground Conductor No.6 USE (Ground)	Exst C5

LIGHT STANDARD SCHEDULE

LIGHT NUMBER	LUMINAIRE TYPE	STANDARDS TYPE	STANDARDS Pole Ht.	STANDARDS Mast Arm	STANDARDS Breakaway
L18	B	B	30'	8'	No
L19	A	A	40'	0' with Tenon "T" adapter.	Yes
L20	A	A	40'	0' with Tenon "T" adapter.	Yes
L21	A	A	40'	0' with Tenon "T" adapter.	Yes
L22	A	A	40'	0' with Tenon "T" adapter.	Yes

LIGHTING CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN TOTAL	CONDUIT RUN SIZE (IN)	UNDERGROUND CONDUCTOR RUN SIZE/TYPE
Pull Box #6 to Existing Fiber Pull Box	Sta 135+65, 41.5' Lt to Sta 143+60, 30.0' Lt	996	2"	Empty Conduit with Tracer Wire

N

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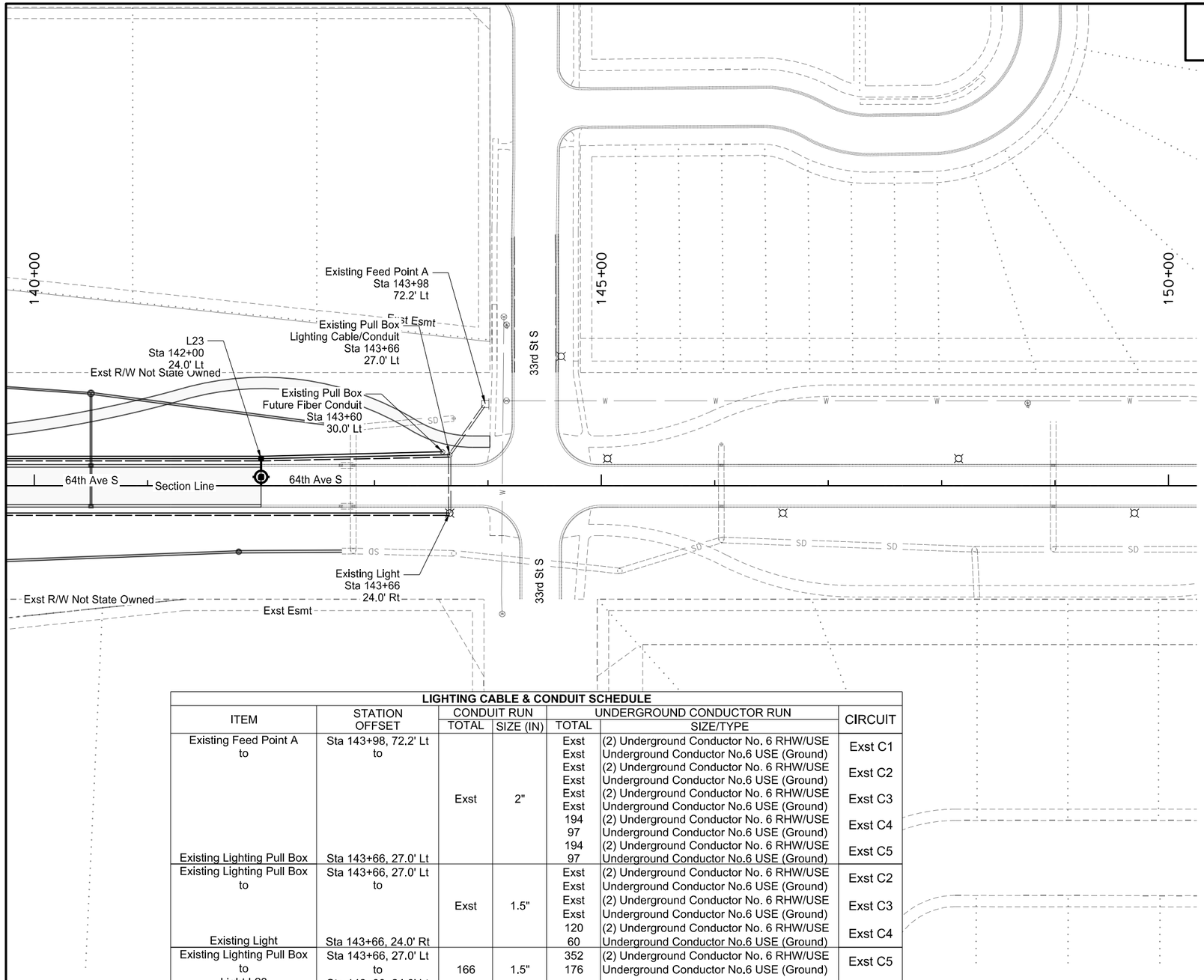
64th Avenue South - 38th St S to 33rd St S

Lighting

64th Avenue South
Sta 130+00 to Sta 140+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	140	5



LIGHT STANDARD SCHEDULE

LIGHT NUMBER	LUMINAIRE TYPE	STANDARDS			
		TYPE	Pole Ht.	Mast Arm	Breakaway
L23	A	A	40'	0' with Tenon "T" adapter.	Yes

LIGHTING CABLE & CONDUIT SCHEDULE

ITEM	STATION OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN		CIRCUIT
		TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE	
Existing Feed Point A	Sta 143+98, 72.2' Lt	Exst	2"	Exst	(2) Underground Conductor No. 6 RHW/USE	Exst C1
to	to			Exst	Underground Conductor No.6 USE (Ground)	
				Exst	(2) Underground Conductor No. 6 RHW/USE	Exst C2
				Exst	Underground Conductor No.6 USE (Ground)	
				Exst	(2) Underground Conductor No. 6 RHW/USE	Exst C3
				Exst	Underground Conductor No.6 USE (Ground)	
				194	(2) Underground Conductor No. 6 RHW/USE	Exst C4
				97	Underground Conductor No.6 USE (Ground)	
				194	(2) Underground Conductor No. 6 RHW/USE	Exst C5
Existing Lighting Pull Box	Sta 143+66, 27.0' Lt			97	Underground Conductor No.6 USE (Ground)	
Existing Lighting Pull Box	Sta 143+66, 27.0' Lt	Exst	1.5"	Exst	(2) Underground Conductor No. 6 RHW/USE	Exst C2
to	to			Exst	Underground Conductor No.6 USE (Ground)	
				Exst	(2) Underground Conductor No. 6 RHW/USE	Exst C3
				Exst	Underground Conductor No.6 USE (Ground)	
				120	(2) Underground Conductor No. 6 RHW/USE	Exst C4
Existing Light	Sta 143+66, 24.0' Rt			60	Underground Conductor No.6 USE (Ground)	
Existing Lighting Pull Box	Sta 143+66, 27.0' Lt	166	1.5"	352	(2) Underground Conductor No. 6 RHW/USE	Exst C5
to	to			176	Underground Conductor No.6 USE (Ground)	
Light L23	Sta 142+00, 24.0' Lt					

N

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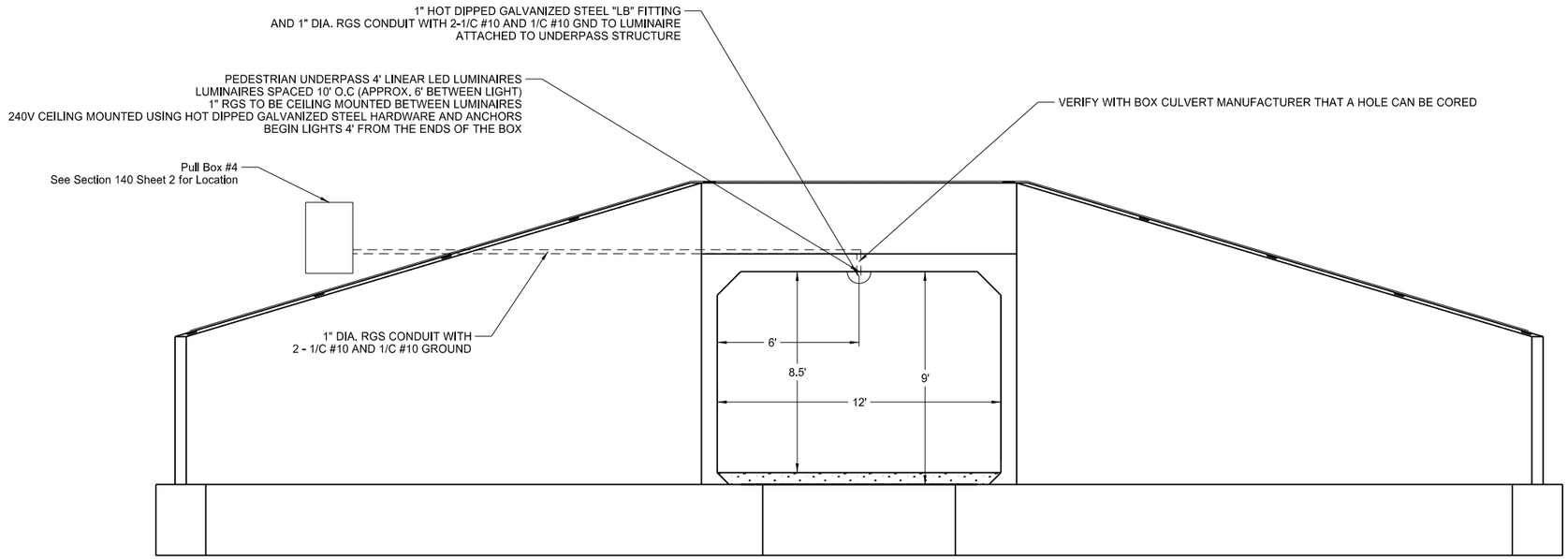
64th Avenue South - 38th St S to 33rd St S

Lighting

64th Avenue South
Sta 140+00 to Sta 150+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	140	6



MANUFACTURER	MODEL	REMARKS
KENALL	SDA-4-0/0-1-45L40K-DCC-DV-2/9-1-WL	FIXTURES FACTORY SET TO 50% DIMMING

*LUMINAIRES AS NOTED OR APPROVED EQUAL

Note: Pedestrian Underpass lights will operate continuously.
Do not wire the cirucuit powering the pedestrian underpass lights to the photoeye in the feed point.

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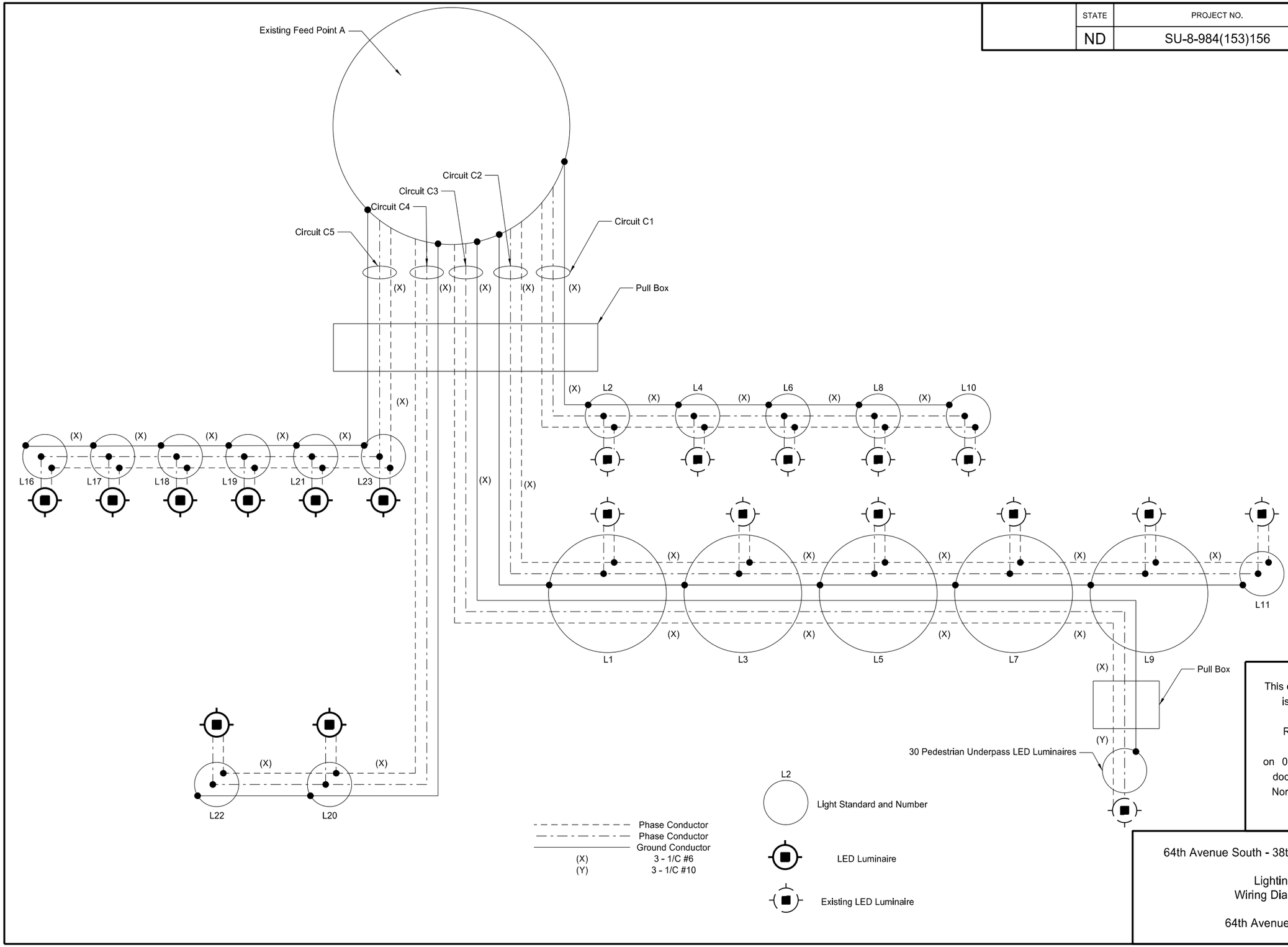
64th Avenue South - 38th St S to 33rd St S

Lighting
Pedestrian Underpass Detail

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	140	7



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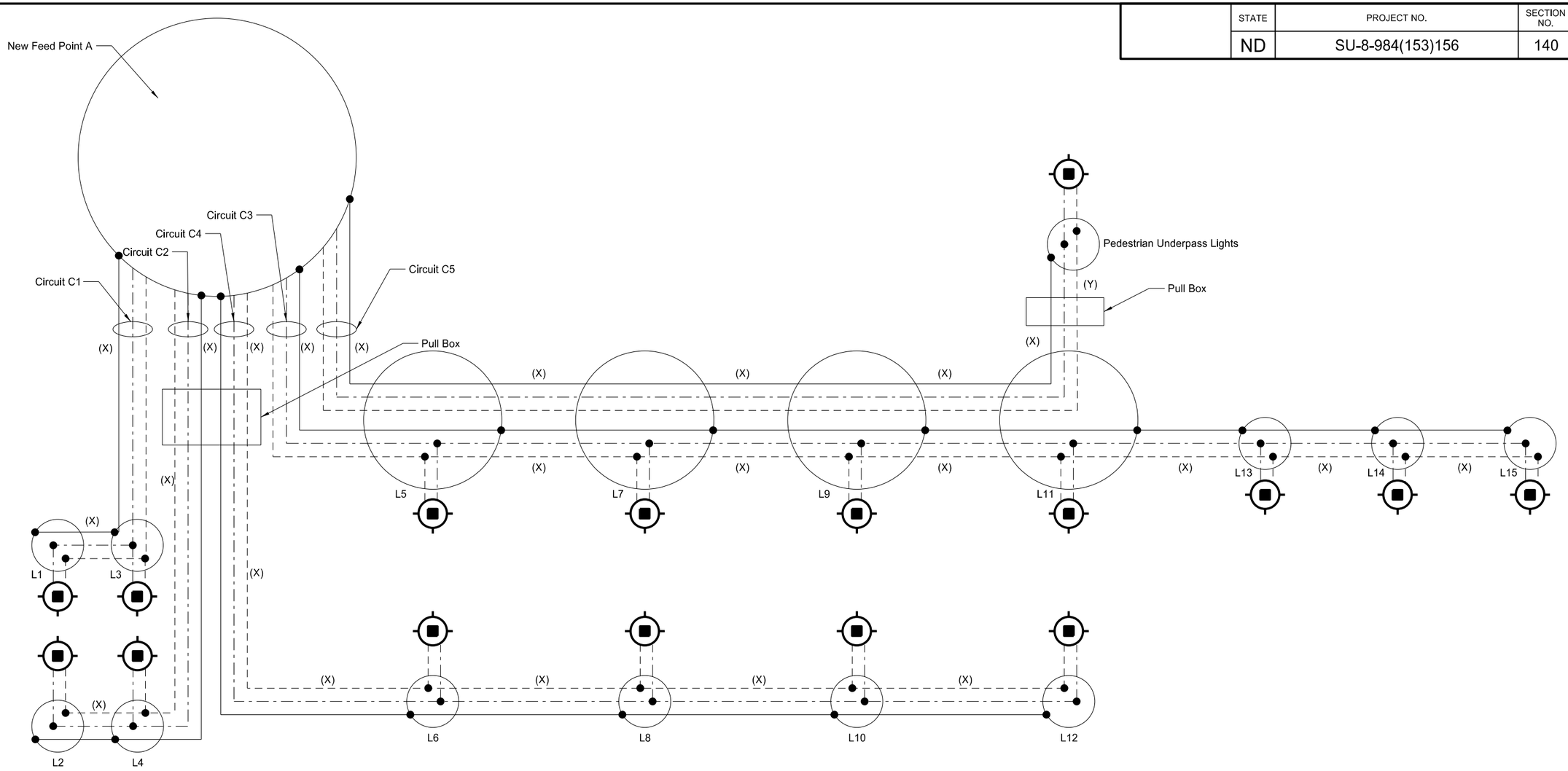
64th Avenue South - 38th St S to 33rd St S

Lighting
Wiring Diagram

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	140	8



Phase Conductor
Phase Conductor
Ground Conductor
(X) 3 - 1/C #6
(Y) 3 - 1/C #10

L2 Light Standard and Number

LED Luminaire

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64th Avenue South - 38th St S to 33rd St S

Lighting
Wiring Diagram

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	140	9

EXISTING FEEDPOINT A PANEL SCHEDULE (Lighting Only)

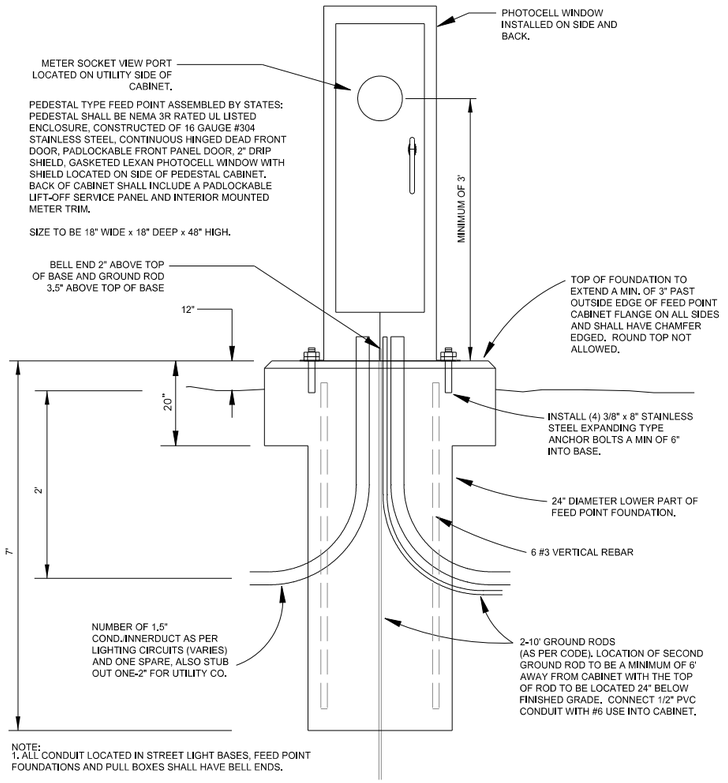
100 Amp Main Breaker, Copper Bus, 120/240 Volt, 1-phase, All breakers 22 kAIC minimum.
Deadfront NEMA 1 enclosure. 14 space minimum loadcenter. Fed from Utility Metersocket. UL SUSE Rated.
(3) - #2 AWG Cu RHW/USE service conductors in Conduit from Utility Metersocket.
Install main loadcenter service conductors in conduit inside feed point cabinet. Provide Typed Identifications according to NEC
Per NEC provide and bond #6 AWG ground electrodes to 2 ground rods minimum 6' apart along with cabinet.

CKT	DESCRIPTION	BRK	V-A	AMPS	ph	AMPS	V-A	BRK	DESCRIPTION	CKT
1	Surge Protector	30	24	0.1	A	0.1	12	15	Control Power & Photoeye	2
3				0.1	B	1.5	180	20	Receptacle (Feedpoint Internal)	4
5	64th Ave Roadway Lighting North side of road (circuit C1)	60	816	1.7	A	2.0	960	60	64th Ave Roadway Lighting South side of road (circuit C2)	6
7				1.7	B	2.0				8
9	Pedestrian Underpass Lighting (circuit C3)	60	3,024	6.3	A	0.9	420	60	64th Avenue Roadway Lighting (South and to the	10
11				6.3	B	0.9				12
13	64th Avenue Roadway Lighting (North and to the West) (C5)	60	1,982	4.1	A					
15				4.1	B					
	Total Connected VA and Amps		7,418	15.2						
				16.6						

NEW FEEDPOINT A PANEL SCHEDULE (Lighting Only)

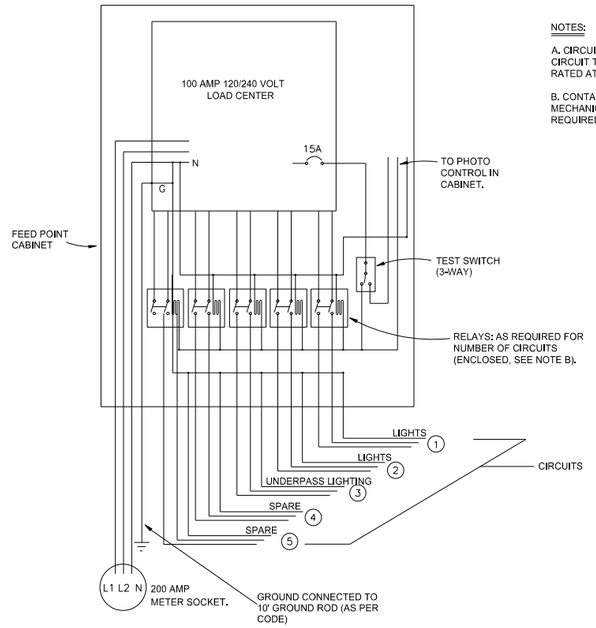
100 Amp Main Breaker, Copper Bus, 120/240 Volt, 1-phase, All breakers 22 kAIC minimum.
Deadfront NEMA 1 enclosure. 16 space minimum loadcenter. Fed from Utility Metersocket. UL SUSE Rated.
(3) - #2 AWG Cu RHW/USE service conductors in Conduit from Utility Metersocket.
Install main loadcenter service conductors in conduit inside feed point cabinet. Provide Typed Identifications according to NEC
Per NEC provide and bond #6 AWG ground electrodes to 2 ground rods minimum 6' apart along with cabinet.

CKT	DESCRIPTION	BRK	V-A	AMPS	ph	AMPS	V-A	BRK	DESCRIPTION	CKT
1	Surge Protector	30	24	0.1	A	0.1	12	15	Control Power & Photoeye	2
3				0.1	B	1.5	180	20	Receptacle (Feedpoint Internal)	4
5	64th Ave Roadway Lighting North side of road to West (C1)	60	420	0.9	A	0.9	420	60	64th Ave Roadway Lighting South side of road to West	6
7				0.9	B	0.9				8
9	64th Ave Roadway Lighting North side of road to East (C3)	60	1,398	2.9	A	1.8	840	60	64th Avenue Roadway Lighting (South and to the	10
11				2.9	B	1.8				12
13	Pedestrian Underpass Lighting (C5)	60	414	0.9	A			60	Spare	14
15				0.9	B					16
	Total Connected VA and Amps		3,708	7.5						
				8.9						



FEED POINT ELEVATION

NO SCALE



NOTES:

A. CIRCUIT BREAKERS TO BE 60A, 2-POLE. TEST SWITCH CIRCUIT TO BE 15A 1-POLE. ALL BREAKERS ARE TO BE RATED AT 22,000 AIC.

B. CONTACTORS TO BE NORMAL OPEN TYPE, 60A, 2-POLE, MECHANICAL, 240V TO GROUND. QUANTITY OF RELAYS AS REQUIRED FOR NUMBER OF CIRCUITS.

WIRING SCHEMATIC: MULTI CIRCUIT FEED POINT

NO SCALE

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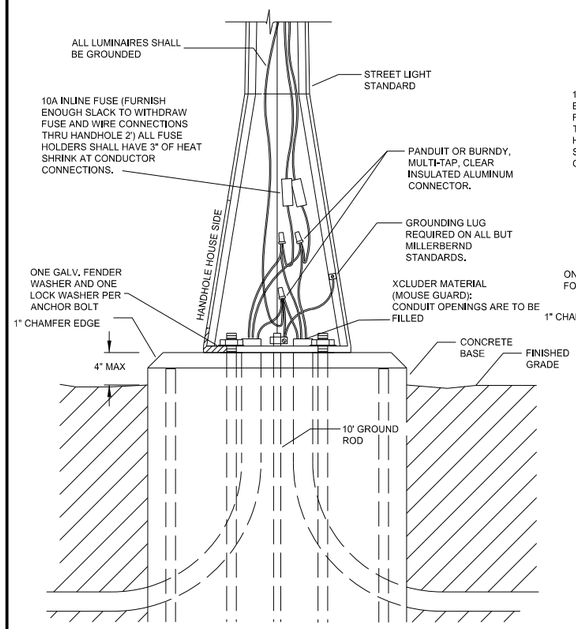
64th Avenue South - 38th St S to 33rd St S

Lighting
Wiring Schematic - Feed Point Details

64th Avenue South

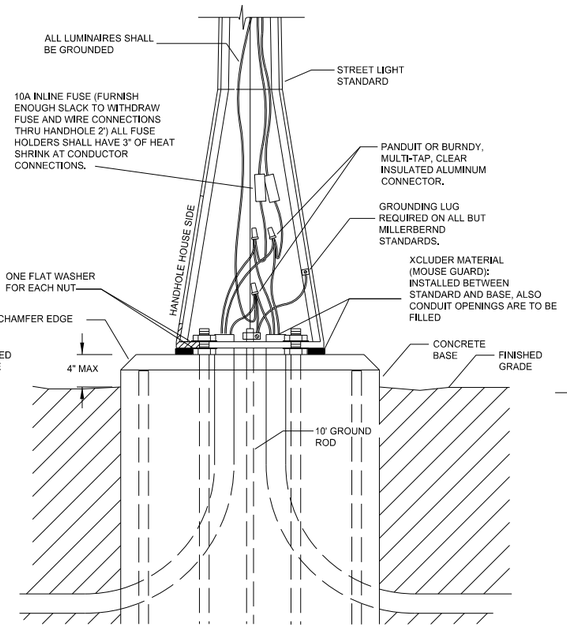
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	140	10



NOTE:
1. ALL CONDUIT LOCATED IN STREET LIGHT BASES, FEED POINT FOUNDATIONS AND PULL BOXES SHALL HAVE BELL ENDS.
2. ALL STANDARDS SHALL HAVE INDIVIDUAL CONDUCTOR RUNS AND FUSES FOR EACH LUMINAIRE.

LIGHT STANDARD: NO LEVELING NUTS

NO SCALE



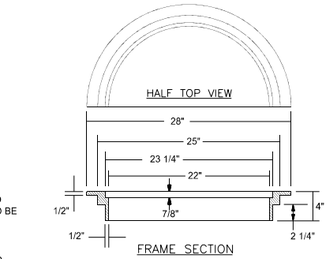
NOTE:
1. ALL CONDUIT LOCATED IN STREET LIGHT BASES, FEED POINT FOUNDATIONS AND PULL BOXES SHALL HAVE BELL ENDS.
2. ALL STANDARDS SHALL HAVE INDIVIDUAL CONDUCTOR RUNS AND FUSES FOR EACH LUMINAIRE.

LIGHT STANDARD: NO LEVELING NUTS

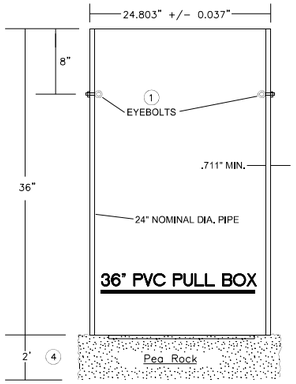
NO SCALE

FRAME AND COVER CASTING

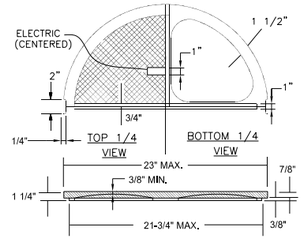
NOTE:
ALL CASTINGS ARE GRAY IRON AS PER SPEC. 3321 CLASS 35B



FRAME SECTION

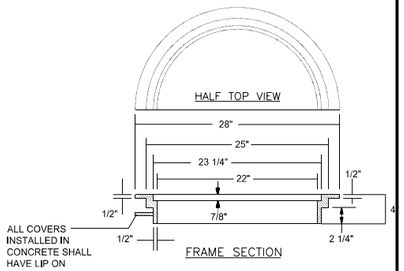


NON-CONCRETE INSTALL

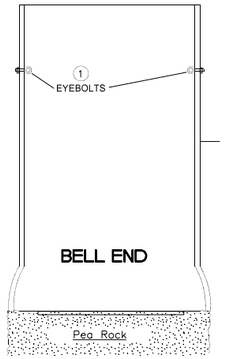


COVER SECTION

1. DIA. X 1 1/4 " SHANK LENGTH, WITH HEX. NUTS AT 180° APART (FOR LIFTING HANDHOLES AND SUPPORTING ELECTRICAL CABLES)
2. PLACE COMPACTED 2'-0" AGGRETGATE DRAIN BED (PEA ROCK) BELOW BOTTOM OF HANDHOLE TO THE SATISFACTION OF THE ENGINEER.
3. CONDUIT HOLES DIAMETER LOCATED IN THE BARREL SECTION ARE SIZED NO MORE THAN 1" LARGER THAN THE CONDUIT OUTSIDE DIAMETER USED.
4. AFTER HANDHOLE AND CONDUIT INSTALLATION, SEAL ALL INSIDE WALLS WATER TIGHT TO THE SATISFACTION OF THE ENGINEER.
5. THE P.V.C. PIPE COMPLIES WITH ASTM F679T-1.
6. ALL CONDUITS SHALL HAVE BELL ENDS AND EXTEND A MAXIMUM OF 3" INTO PULL BOX



FRAME SECTION



CONCRETE INSTALL

PULL BOX, METAL FRAME AND COVER DETAIL

NO SCALE

SU-8-984(153)156

Spec	Code	Item Description	Unit	64th Avenue South: Lighting System	64th Avenue South: IT System
770	0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	EA	20	-
770	0050	CONCRETE FOUNDATION-FEED POINT-TYPE A	EA	1	-
770	0100	PULL BOX	EA	2	5
770	0301	1IN DIA RIGID STEEL CONDUIT	LF	65	-
770	0320	1.5IN DIAMETER RIGID CONDUIT	LF	5,655	-
770	0330	2IN DIAMETER RIGID CONDUIT	LF	1,258	4,078
770	0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	17,312	-
770	0507	UNDERGROUND CONDUCTOR NO10-TYPE RHW	LF	102	-
770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	8,656	-
770	0607	UNDERGROUND CONDUCTOR NO10-TYPE THW	LF	75	-
770	0745	FEED POINT-TYPE IV-PAD MOUNTED	EA	1	-
770	1003	ORNAMENTAL LIGHT STANDARD	EA	4	-
770	4210	LED LUMINAIRE - TYPE A (210 WATT)	EA	19	-
770	4211	LED LUMINAIRE - TYPE B (140 WATT)	EA	4	-
770	4300	UNDERPASS LIGHT UNIT CEILING MTD-50 WATT	EA	9	-
770	7010	LIGHT STANDARD 40FT MT HT (NO MAST ARM)	EA	19	-

Items shown are for informational purposes, contractor shall provide all labor and equipment required for the lighting system and future IT System to be fully operational as shown in the plans. Items shall be included in the corresponding price bids "LIGHTING SYSTEM A" AND "IT SYSTEM".

SPEC	CODE	BID ITEM	QTY	UNIT
770	0003	LIGHTING SYSTEM A		
		64th Avenue South	1	EA
772	9200	IT SYSTEM		
		64th Avenue South	1	EA

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64th Avenue South - 38th St S to 33rd St S

Lighting
Details and Quantities

64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	140	11

LIGHT STANDARD FOUNDATION SELECTION TABLE		
Description	Footing Depth "D" 24" & 30" Diameter	Footing Depth "D" 36" & 42" Diameter
Light Standard		
30'-0" Mounting Height	8', 8'	8',8'
40'-0" Mounting Height	8', 8'	8',8'

NOTES FOR LIGHT STANDARD FOUNDATIONS:

1. For Light Standard foundations, choose a diameter that is at a minimum the largest of the following scenarios:

   - Anchor bolt cage circle diameter plus 12"
   - Base plus 6"
   - 24"

   It is the Contractor's responsibility to determine the foundation diameter and include the corresponding costs for the actual diameter in the corresponding unit price bid "CONCRETE FOUNDATION-HIGHWAY LIGHTING".

2. Provide Class AAE-3 Portland Cement Concrete mixed and proportioned as specified in Section 802.

3. Provide Grade 60 reinforcing steel.

4. The Contractor may use temporary casing to maintain the opening prior to placement of concrete. The casing will be removed prior to curing of the concrete. If casing is used, it will be of sufficient strength to withstand handling and installation procedures. The Contractor will submit a casing material proposal to the Engineer for review two weeks prior to ordering casing material. Include all costs associated with the temporary casing in the corresponding unit price bid "CONCRETE FOUNDATION-HIGHWAY LIGHTING". Permanent casing of the foundation will not be used.

5. Include all costs associated with the construction of the foundation in the corresponding unit price bid "CONCRETE FOUNDATION-HIGHWAY LIGHTING". This includes but is not limited to excavation, concrete, reinforcing steel, anchor bolts and ground rod.

6. See Standard Drawing D-770-1 for additional foundation information.

7. Light Standards will have a minimum of 4 anchor bolts.

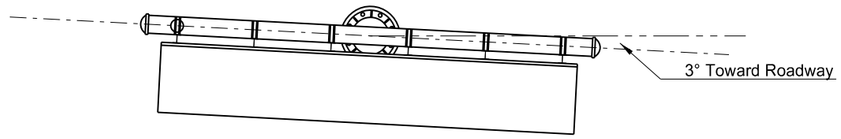
64th Avenue South - 38th St S to 33rd St S

Light Concrete Foundations

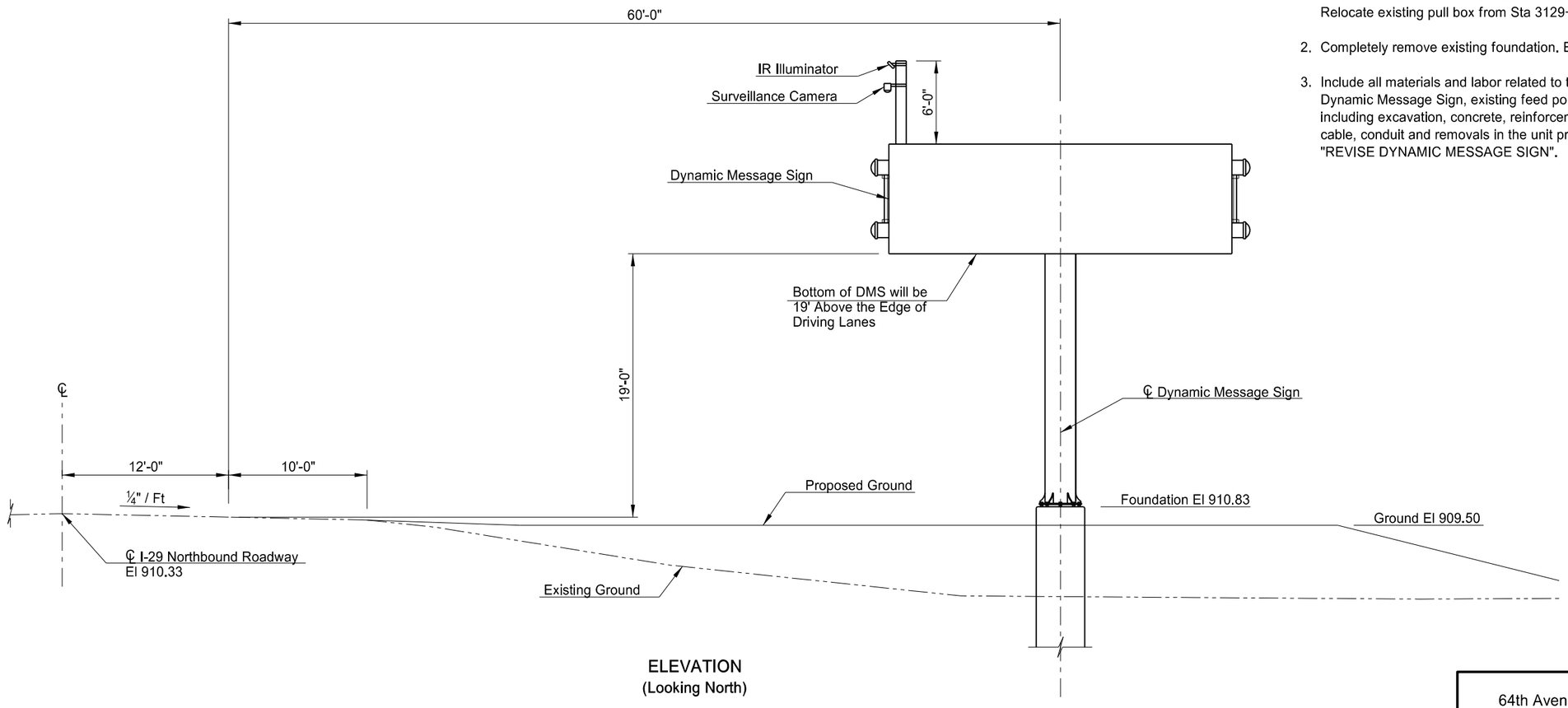
64th Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	160	1

SPEC CODE	BID ITEM		QTY	UNIT
754	8025	REVISE DYNAMIC MESSAGE SIGN		
		Sta 3102+79.20	1	EA



PLAN



ELEVATION
(Looking North)

Note: Sign will be angled 3° toward roadway.

NOTES:

1. Relocate the existing Dynamic Message Sign from existing location at Sta 3129+22.00 ~ 124.26' Rt. Place structure on a new foundation located at Sta 3102+80.00 ~ 124.00' Rt. Relocate the existing feed point at Sta 3129+27 ~ 137' RT. Place on new foundation located at Sta 3102+98 ~ 144' RT. Relocate existing pull box from Sta 3129+27 ~ 137' RT to Sta 3102+98 ~ 136' RT.
2. Completely remove existing foundation. Existing foundation is 5' ø x20' deep.
3. Include all materials and labor related to the relocation of the existing Dynamic Message Sign, existing feed point, existing mirror, and existing pull box including excavation, concrete, reinforcement, anchor bolts, relocation, cable, conduit and removals in the unit price bid for "REVISE DYNAMIC MESSAGE SIGN".

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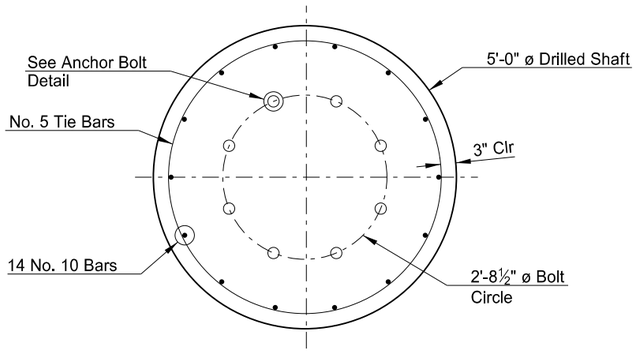
64th Avenue South - 38th St S to 33rd St S

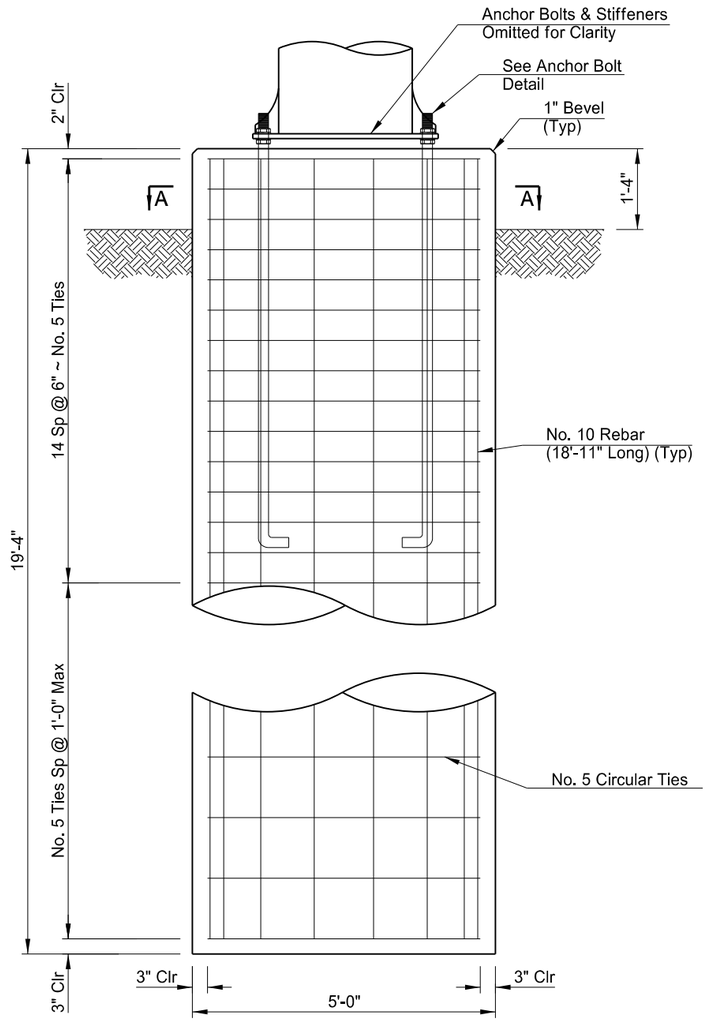
Revise Dynamic Message Sign
RP 58.765

I-29 Northbound Roadway

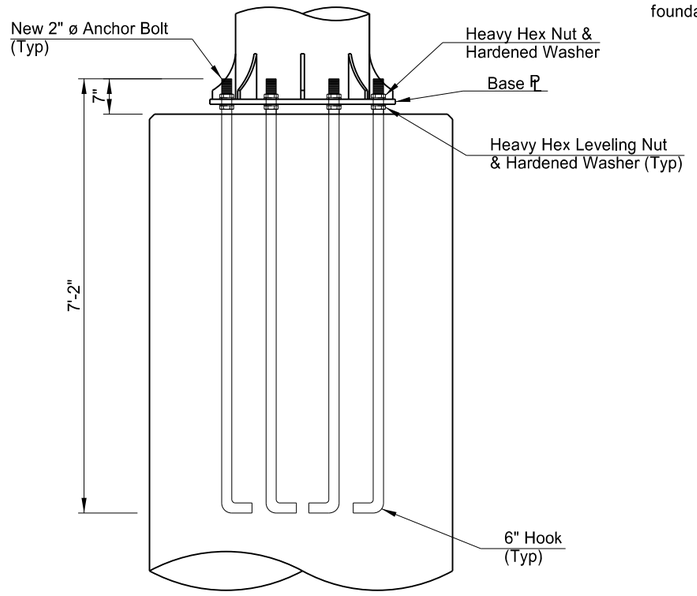
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	160	2



SECTION A-A



FOUNDATION ELEVATION



ANCHOR BOLT DETAIL

NOTES:

1. Use Class AE-3 Portland Cement Concrete mixed and proportioned as specified in Section 802. Use ASTM F3125 Grade A325 anchor bolts and Grade 60 reinforcing.
2. See Standard Drawing D-770-1 for additional foundation information.
3. The Contractor may use temporary casing to maintain the opening prior to placement of concrete. The casing will be removed prior to curing of the concrete. If casing is used, it will be of sufficient strength to withstand handling and installation procedures. The Contractor will submit a casing material proposal to the Engineer for review two weeks prior to ordering casing material. Include all costs associated with the temporary casing in the corresponding unit price bid "REVISE DYNAMIC MESSAGE SIGN". Permanent casing of the foundation will not be used.

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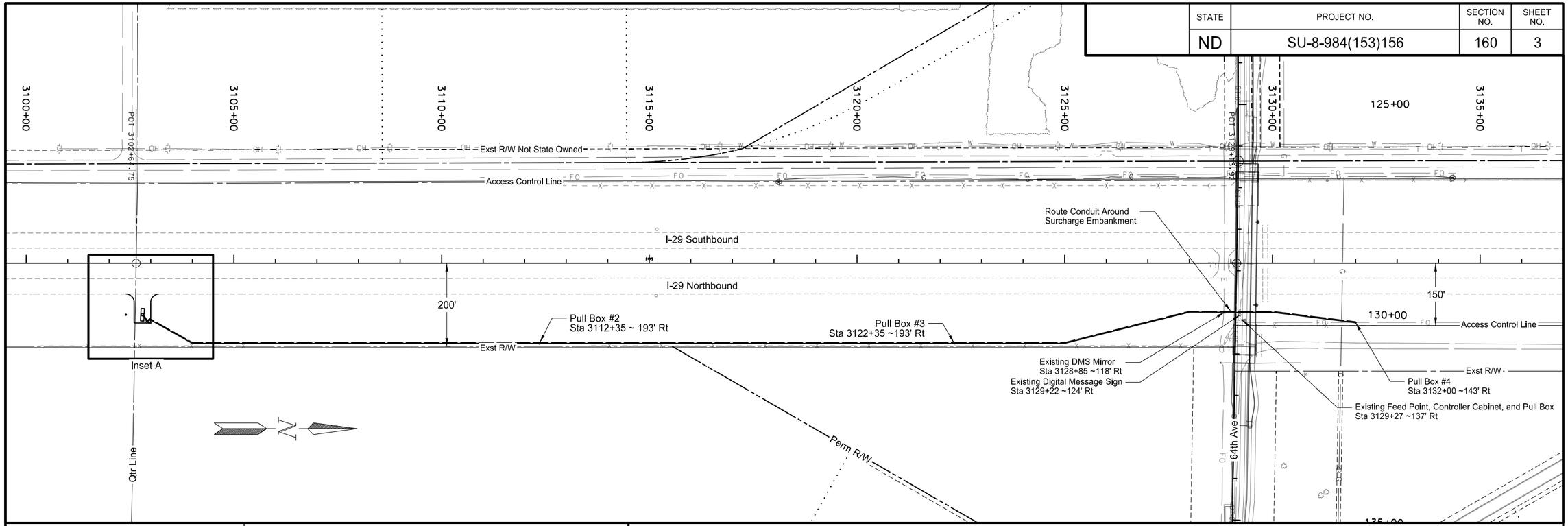
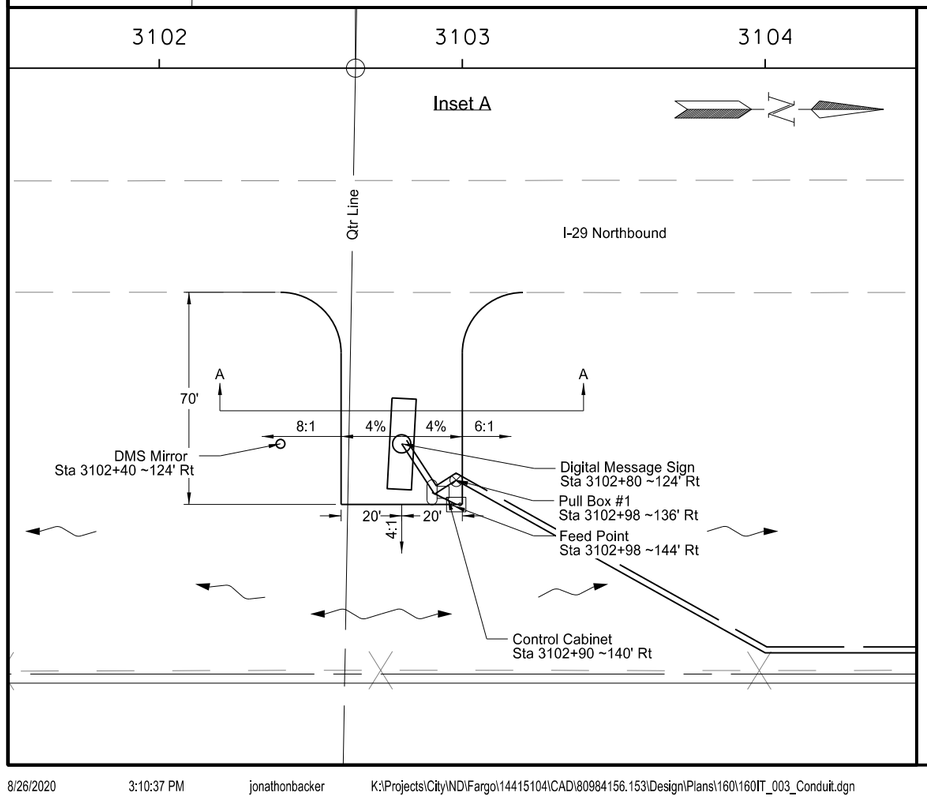
64th Avenue South - 38th St S to 33rd St S

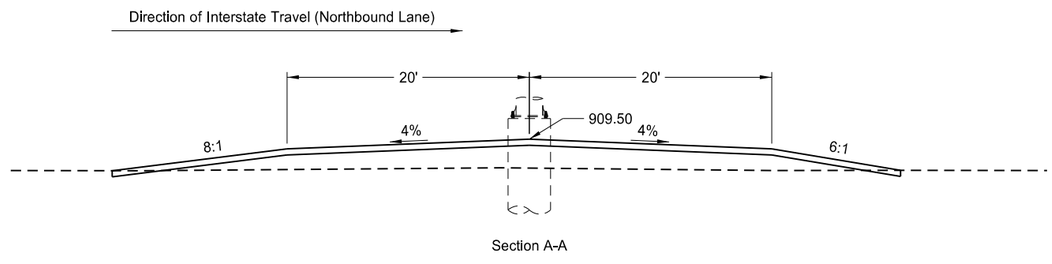
Revise Dynamic Message Sign
RP 58.765

I-29 Northbound Roadway

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	160	3







Section A-A

Notes:
1. Coil extra fiber from relocation existing IT pull box in enclosure.
2. Extend 36 strand single mode fiber from existing location to new site by fusion splicing.
3. At new DMS location, splice fiber 1-6 of the 36 single mode cable to fibers 1-6 on the breakout cable. Fiber 6 is the active fiber, fibers 1-5 are spares.

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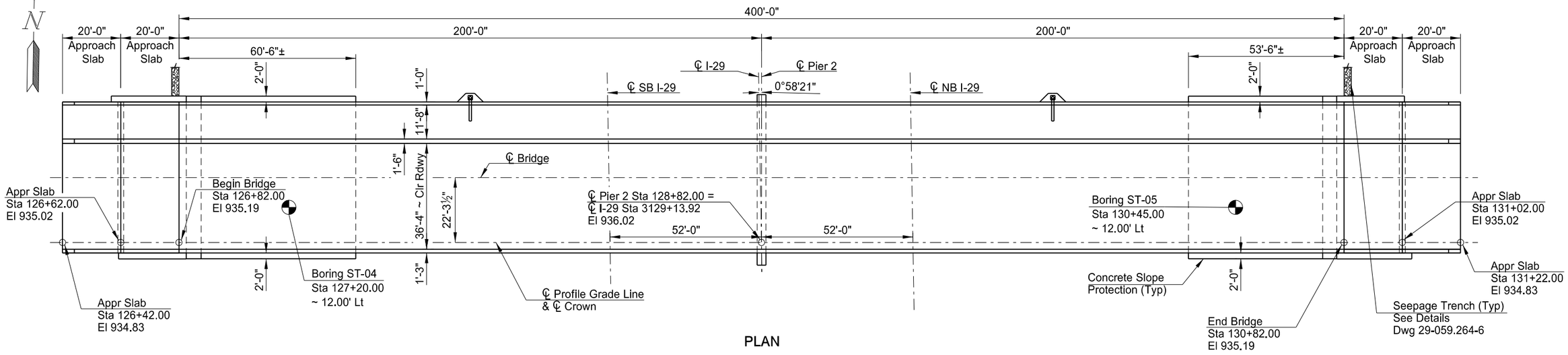
64th Avenue South - 38th St S to 33rd St S

DMS Relocation & Conduit Runs

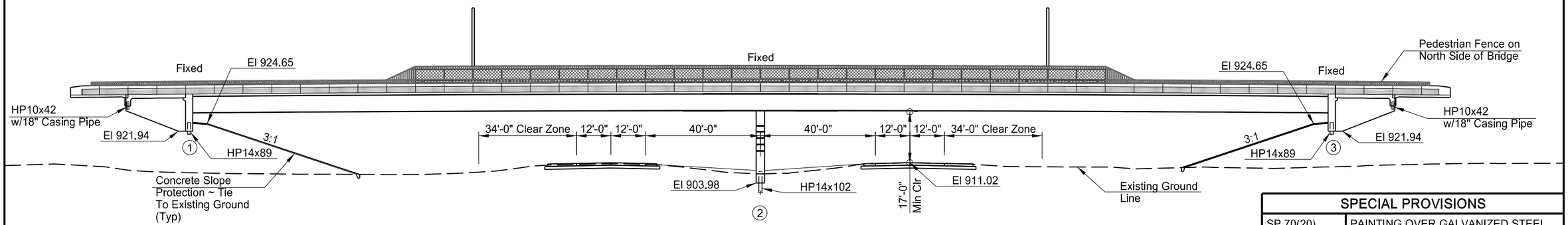
64th Avenue South

23 U.S.C. 409
NDDOT Reserves All Objections

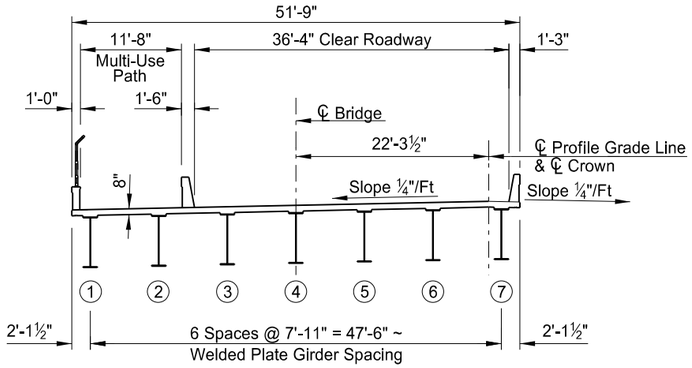
BRIDGE CODE		STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
X731		ND	SU-8-984(153)156	170	1



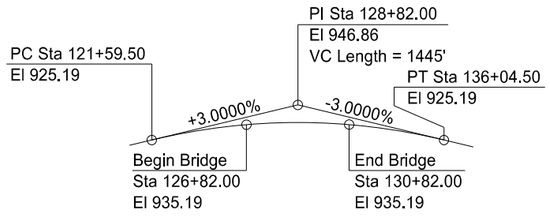
PLAN



ELEVATION



TYPICAL SECTION



VERTICAL CURVE DATA
AT ℄ ROADWAY

DESIGN STRENGTHS:

f'c = 3,000 psi ~ Class AE-3 Concrete
f'c = 4,000 psi ~ Class AAE-3 Concrete
fy = 50,000 psi ~ Structural Steel
fy = 60,000 psi ~ Reinforcing Steel

Load & Resistance Factor Design

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SPECIAL PROVISIONS	
SP 70(20)	PAINTING OVER GALVANIZED STEEL
SP 71(20)	ARCHITECTURAL SURFACE FINISH
SP 106(20)	CONDITIONS OF CONTRACT AWARD

STANDARD DRAWINGS

D-258-1, D-622-1, D-714-18, D-900-1

F.W.S. 15 PSF

HL-93 DESIGN LOADING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

BRIDGE LAYOUT

PROJECT: SU-8-984(153)156
STATION: 3129+13.92
CASS COUNTY

10/16/20 (DATE)
Jon Ketterling /s/ (BRIDGE ENGINEER)

NOTES

100 SCOPE OF WORK: This project consists of building a new 2-span steel plate girder bridge with an overall bridge length of 400'-0" and a clear roadway width of 36'-4".

100 GENERAL: Include the cost of furnishing and placing preformed expansion joint filler, concrete inserts, rebar couplers, silicone sealant, and other miscellaneous items in the price bid for Class AE-3 and AAE-3 concrete.

105 WORK DRAWINGS: Submit work drawings for the following items to the Engineer to Review.

1. Structural Steel
2. Railing
3. Pedestrian Fence
4. Form Liner

210 EXCAVATION: Include the excavation costs at the abutments, as shown in the “Detail at Abutment”, and the excavation costs at the pier in the lump sum bid item, “Class 1 Excavation.”

602 ENDWALLS: Place the endwall concrete at the same time as the deck.

602 DECK PLACEMENT: Do not place deck concrete until the entire deck is formed. Place the deck concrete at a minimum rate of 45 CY per hour. See Dwg 29-059.264-18 for the deck pour sequence. A minimum of 72 hours is required between deck pours.

602 BRIDGE APPROACH SLABS: Mechanically finish approach slabs as specified in Section 602.04 D, “Deck Finishing.”

602 SURFACE FINISH “D”: Apply Surface Finish “D” on all exposed substructure surfaces except as noted in Architectural Surface Finish SP 71(20) and the exposed endwall areas outside of the exterior beams.

602 BARRIERS: Construct V-grooves that are 3/4 inch wide and 3/4 inch deep in all faces, excluding form liner areas, of the barriers at the pier and at equal spaces between the piers and abutments at approximately 10-foot spacing.

602 PENETRATING WATER REPELLENT TREATMENT: Apply penetrating water repellent to the driving surface of the bridge deck and approach slabs and the front and top faces of the barriers and wall, and the abutment and pier bearing surfaces a minimum of 21 days after placement of concrete and a minimum of 48 hours after completion of the final surface finish as required by Section 602.04 I “Surface Finish”. Prior to applying penetrating water repellant, seal any cracks that form in the deck as directed by the Engineer. Include costs for crack sealing in the price bid for “Penetrating Water Repellent Treatment”.

602 TEMPORARY BRACING: Temporary bracing will be required at the exterior steel girders to prevent rotation. Design the temporary bracing assuming that the cross frames will not carry any of the load. The strength of the bracing will be dependent on the forces induced by the weight of the concrete, forms, equipment, and workers. The contractor’s temporary bracing plan and design, stamped by a Professional Engineer licensed in North Dakota, will be submitted to the Engineer for review.

616 STRUCTURAL STEEL: Structural steel will be AASHTO M 270 Grade 50T2, except the requirement for Charpy V-Notch test is waived for the bearing stiffeners, transverse stiffeners, connection plates and cross frames. The total weight of structural steel is approximately 1,009,700 pounds.

Install girder webs, girder ends and the pier cross frames to be vertical under steel dead load fit.

Use stud shear connectors (Type B) that meet ASTM A108. Use pintles that meet ASTM A588. Use swedged anchor bolts that meet ASTM A449.

Round all exposed corners and edges on all steel members to a 1/16” radius or ground to a 1/16” chamfer.

616 PAINT AND PAINTING: The structural steel will be painted red, color number 10076 meeting AMS Standard 595A.

622 PILE SLEEVES: Install 18-inch diameter pile sleeves at all approach slab pile (HP10x42) locations. The sleeves will be Type S Corrugated Polyethylene Culverts in accordance with AASHTO M-294. The piles sleeves will be embedded a minimum of 3 feet into the existing ground and will extend to the bottom of the approach slab grade beam.

Install the sleeves before any geofoam or piling has been placed. Backfill the sleeves with a polymer free sodium bentonite slurry, designed for sealing wells and bored holes. The bentonite slurry will be made by thoroughly mixing bentonite with water according to the manufacturer’s recommendations for the product used. In no case will more than 100 gallons (500 L) of water be used per 80 pounds (50 kg) of bentonite.

NOTES

622 PILING: Drive abutment and pier piling with a diesel hammer with a rated energy and ram weight (minimum of 6,000 pounds) of at least 195,734 foot-pound-tons computed by the formula:

W(E–30,800) + 1.271E

W = Weight of the ram (tons)
E = Rated hammer energy

Drive approach slab piling with a diesel hammer with a rated energy and ram weight (minimum of 2,500 pounds) of at least 46,893 foot-pound-tons computed by the formula:

W(E–12,936) + 0.725E

W = Weight of the ram (tons)
E = Rated hammer energy

Run the hammer at an energy that produces a penetration at bearing between ½" and 3 inches in the last 10 blows.

624 PEDESTRIAN FENCE & RAILING: If Option 1 is selected to be constructed, the Engineer will pay for the “Railing” concurrently and at the same measurement as the “Pedestrian Fence”. No distinction will be made between different parts of the fence and railing.

624 RAILING: Round all exposed corners and edges on all steel members to a 1/16” radius or ground to a 1/16” chamfer.

770 CONDUIT SYSTEM & BRIDGE LIGHTING: Refer to Section 140 for details, bid items and quantities for the utility conduit and bridge lights.

802 FLY ASH: Replace cement in the bridge deck mix design with fly ash on a 1:1 ratio between a minimum of 25% and a maximum of 29% by weight.

930 ROADWAY CANOPY: A canopy is required to be constructed above the traveled roadway under the new structure to protect traffic from falling material. The canopy is an added safeguard and does not relieve the Contractor from any responsibility for the safety of the public.

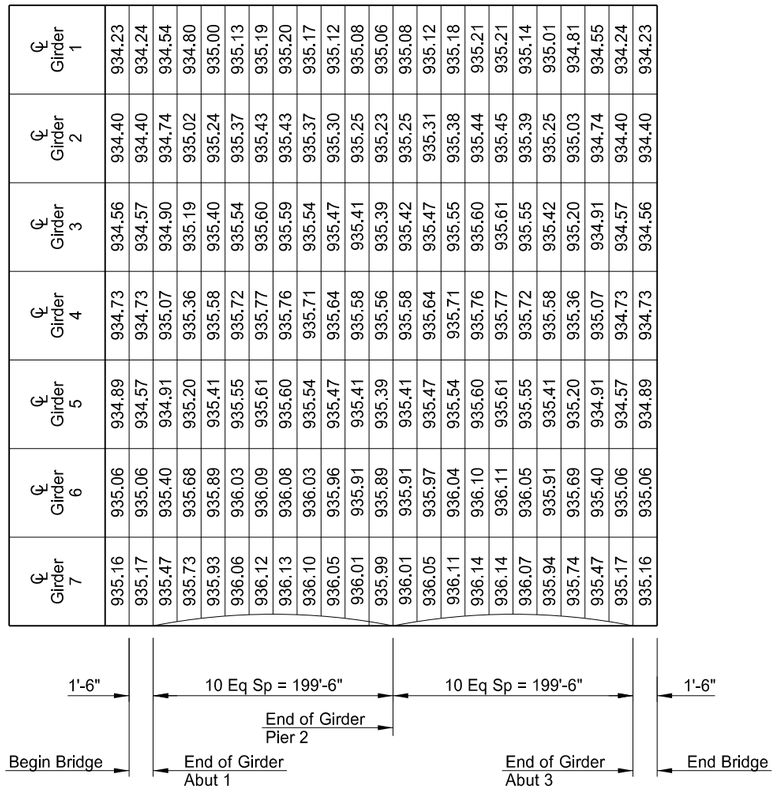
Submit the canopy details, including materials that will be used, to the Engineer for review. The canopy will provide a minimum vertical clearance of 16'-0" above the traveled roadway. The canopy will be extended a minimum distance of 5'-0" beyond the outside edge of deck of the structure and a minimum distance of 5'-0" beyond the edge of the driving lanes beneath the structure.

The canopy will be in place before installing forming for the new deck and remain in place until after the new superstructure is complete. The canopy may be supported from the ground or suspended from the girders. Complete the installation of the canopy in a minimum amount of time and with the least inconvenience to the public.

Once the bridge superstructure is completed, remove the canopy. Roadway canopy will be paid for at the contract unit price for “Roadway Canopy.” Payment for “Roadway Canopy” includes the construction, maintenance, and removal of the canopy system.

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	4



SCREED ELEVATIONS
(Girder 1 is the north girder.)

BRIDGE BID ITEMS

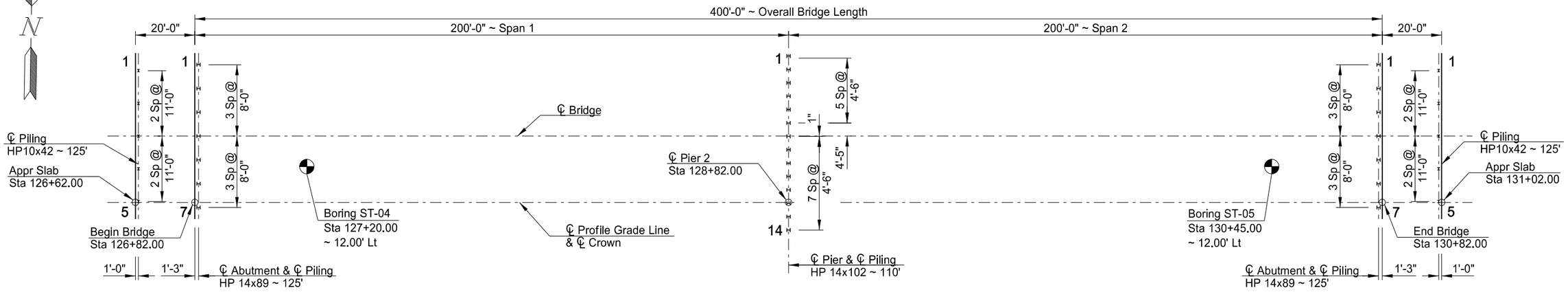
SPEC	CODE	ITEM DESCRIPTION	UNIT	BASE BID	OPTION 1	OPTION 2
210	0099	CLASS 1 EXCAVATION	L SUM	1	0	0
210	0201	FOUNDATION PREPARATION	EA	1	0	0
258	0100	CONCRETE SLOPE PROTECTION	SY	709	0	0
602	0130	CLASS AAE-3 CONCRETE	CY	746.7	0	0
602	1130	CLASS AE-3 CONCRETE	CY	265.7	0	0
602	1133	CONCRETE BRIDGE APPROACH SLAB	SY	230	0	0
602	1134	PILE SUPPORTED APPROACH SLAB	SY	230	0	0
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	3,250	0	0
602	7050	ARCHITECTURAL SURFACE FINISH	SF	0	0	4,169
612	0115	REINFORCING STEEL-GRADE 60	LBS	32,621	0	0
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	157,843	0	0
616	5890	STRUCTURAL STEEL	L SUM	1	0	0
622	0020	STEEL PILING HP 10 X 42	LF	1,250	0	0
622	0068	STEEL PILING HP 14 X 89	LF	1,750	0	0
622	0070	STEEL PILING HP 14 X 102	LF	1,540	0	0
624	0124	PEDESTRIAN FENCE	LF	465.3	0	0
624	0151	RAILING	LF	0	465.3	0
714	8498	CASING PIPE 18 IN	LF	256	0	0
930	3000	BRIDGE BENCH MARKS	SET	1	0	0
930	7012	ROADWAY CANOPY	L SUM	1	0	0
930	9537	ABUTMENT UNDERDRAIN SYSTEM	EA	2	0	0

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

SCREED ELEVATIONS &
BID ITEM QUANTITIES

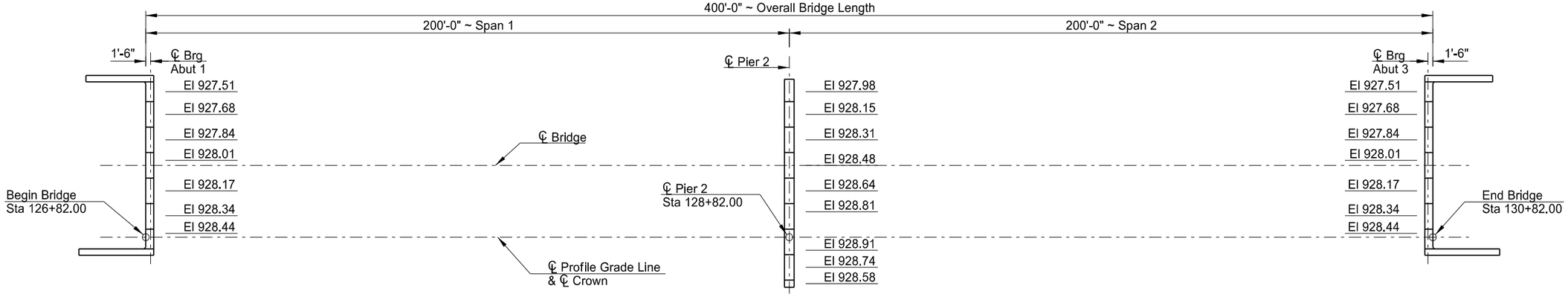
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	5



Drive the HP10x42 Pile to 105 tons.
Drive the HP14x89 Pile to 218 tons.
Drive the HP14x102 Pile to 250 tons.

PILING LAYOUT



(Elevations shown are to top of finished concrete.)

BEARING ELEVATIONS

NOTE:

For double acting or single acting diesel hammers, calculate the safe bearing value of piles by the following formula:

$$P = \frac{4.5E}{S + 0.2} \times \frac{W + 0.2M}{W + M}$$

Where:

P = Safe bearing value, in pounds.
W = Weight of striking parts (ram), in pounds.
M = Weight of parts being driven, in pounds. Includes pile weight, anvil (if any), driving cap, etc.
E = Energy per blow, in foot-pounds.
S = Average penetration of pile in inches per blow for last ten blows.

For single acting hammers, calculate E by multiplying observed stroke (ft) and W (lbs).

PILE COORDINATES

	PILE	NORTHING	EASTING
WEST APPR SLAB	1	430,927.9209	2,885,318.7961
	5	430,883.9269	2,885,319.5216
ABUT 1	1	430,930.2546	2,885,339.0103
	7	430,882.2611	2,885,339.8019
PIER 2	1	430,936.4483	2,885,537.6852
	14	430,877.9562	2,885,538.6499
ABUT 3	1	430,936.8094	2,885,736.4563
	7	430,888.8159	2,885,737.2478
EAST APPR SLAB	1	430,935.1436	2,885,756.7365
	5	430,891.1495	2,885,757.4621

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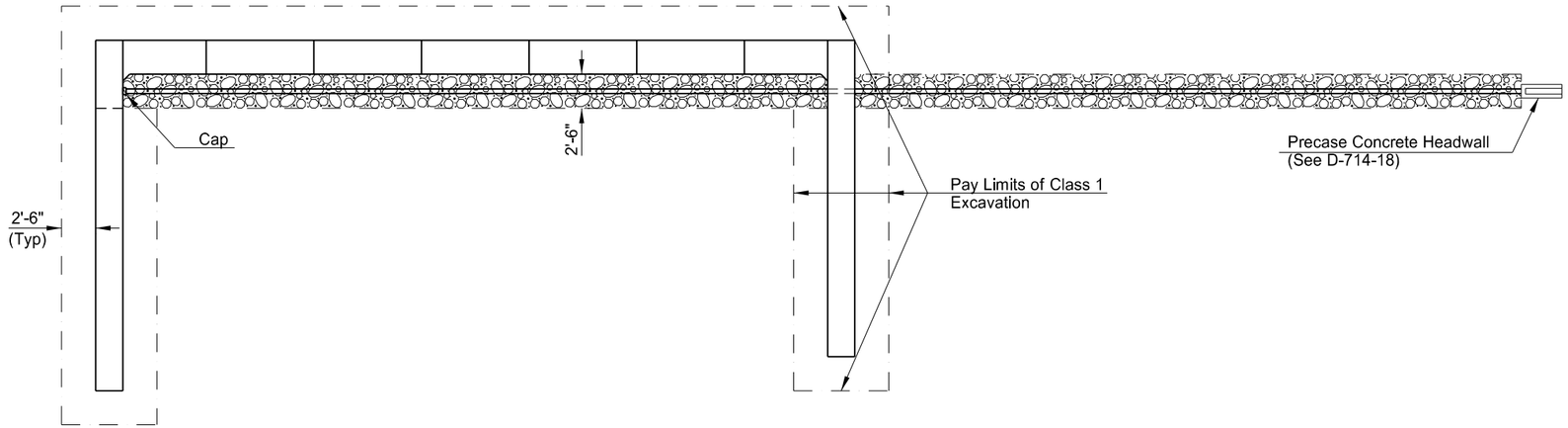
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

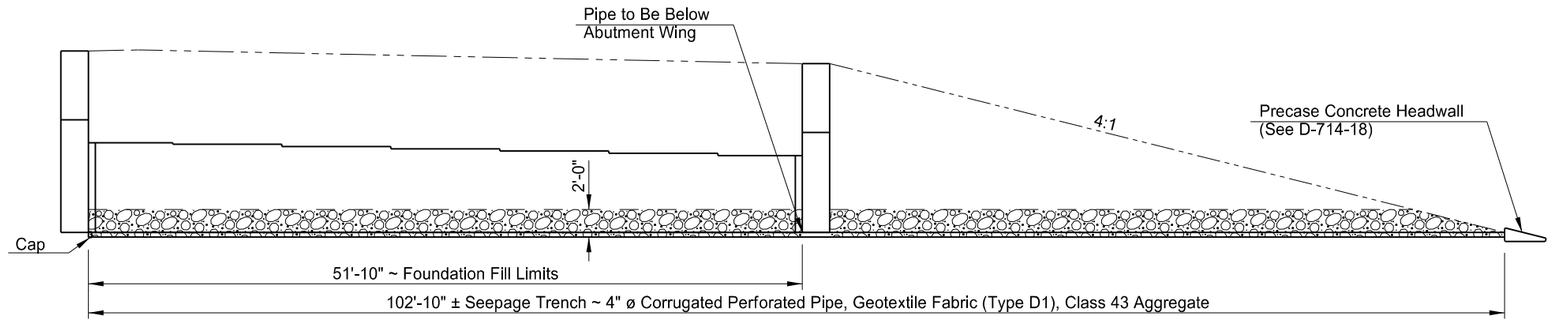
PILE LAYOUT &
BEARING ELEVATIONS

23 U.S.C. 409
NDDOT Reserves All Objections

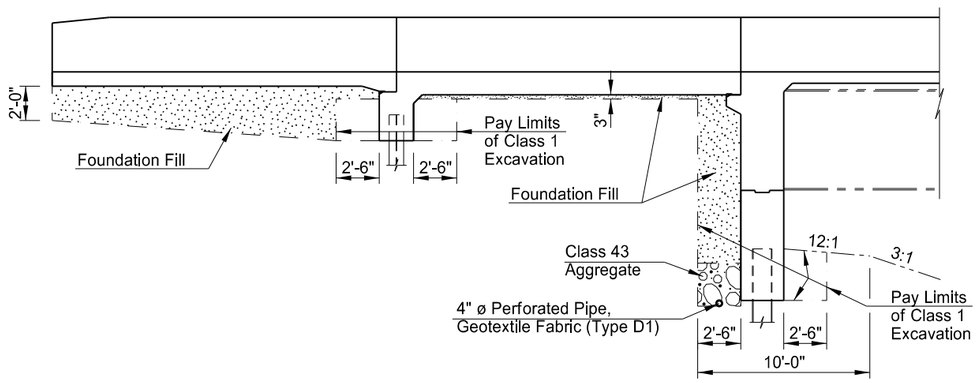
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	6



ABUTMENT PLAN



BACK FACE OF ABUTMENT



DETAIL AT ABUTMENT

NOTES:

Use corrugated perforated pipe that meets the requirements of Section 830.03 A.4. Provide fabric wrapping for the pipe that meets the requirements of Section 858.01 for D3 or D4 drainage fabric. Provide aggregate that meets the requirements of Section 816.03, Class 43. Provide foundation fill that meets the requirements of Section 210.

Include the cost to furnish and place the foundation fill, aggregate, corrugated perforated pipe, fabric wrapping and headwalls in the pay item "Abutment Underdrain System."

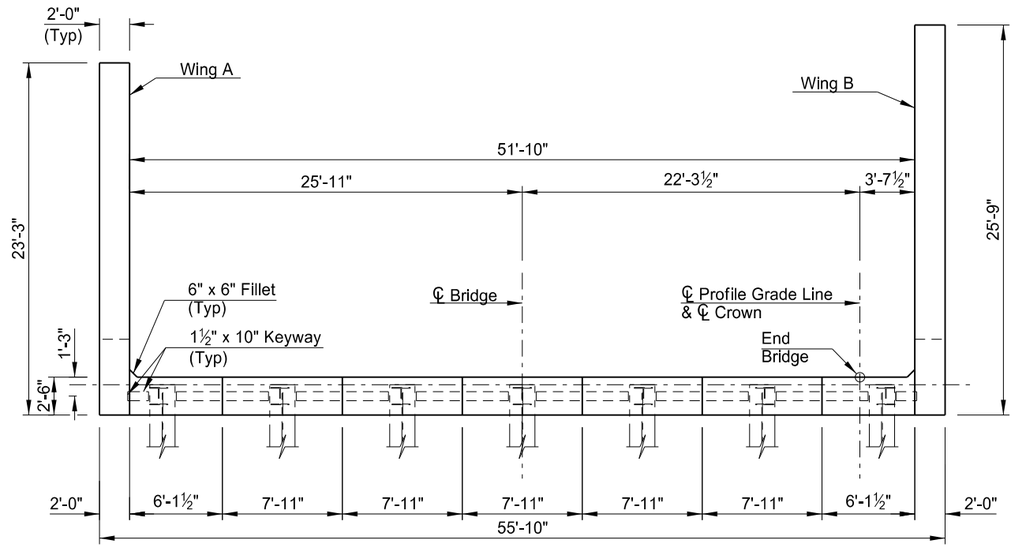
Outlet the seepage trench at both abutments to the north.

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

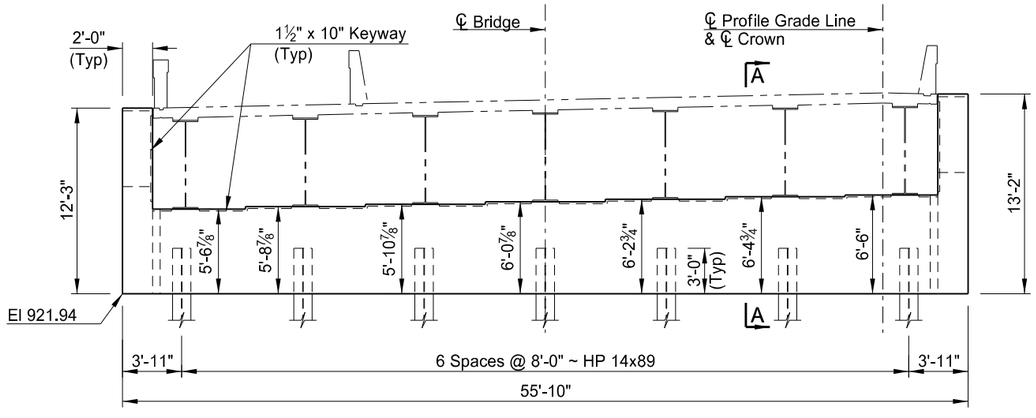
ABUTMENT UNDERDRAIN &
EXCAVATION DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

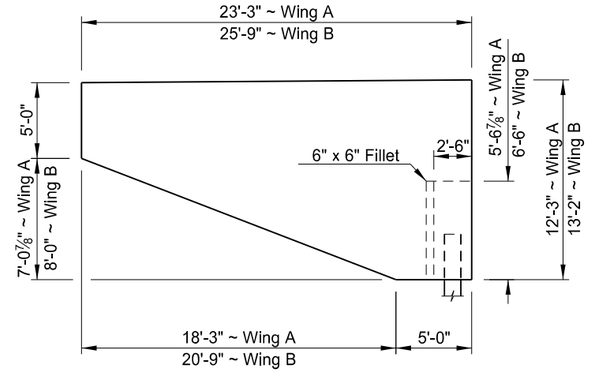
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	7



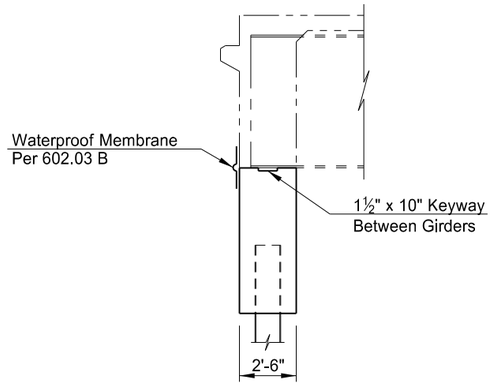
PLAN



ELEVATION



WING ELEVATION



A-A

NOTE:
Abutment 3 shown.

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QUANTITIES

SEE DWG 29-059.264-9

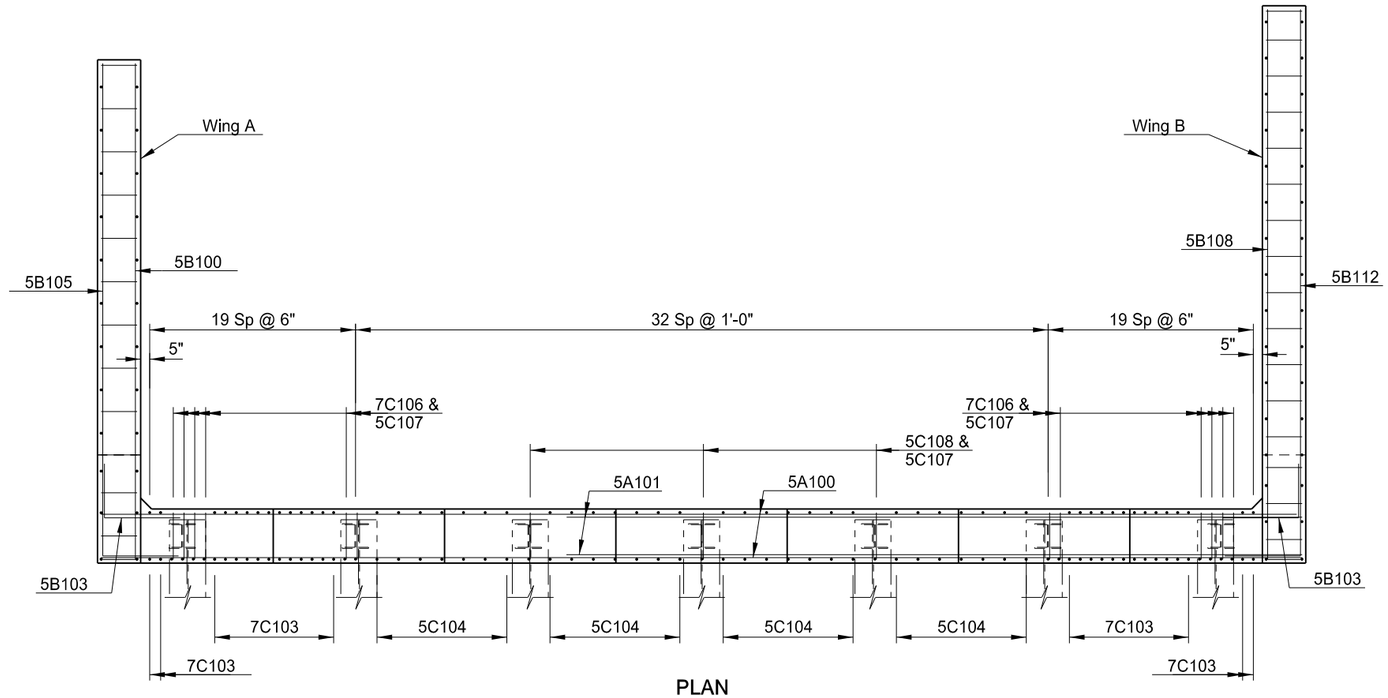
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

(SHOWING DIMENSIONS)

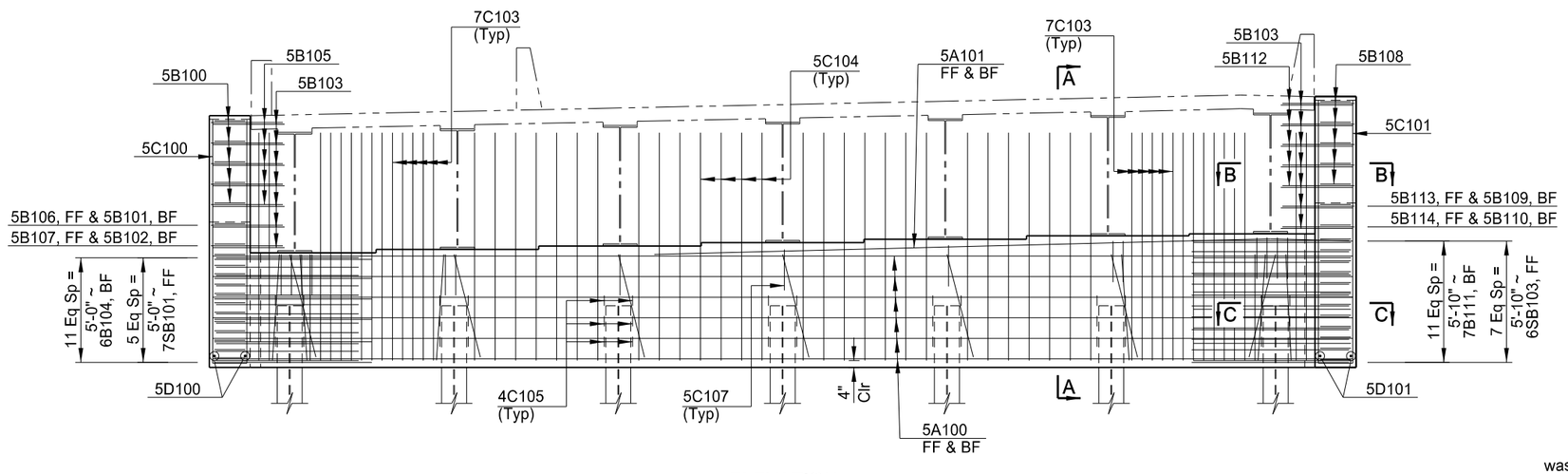
ABUTMENT DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	8



PLAN



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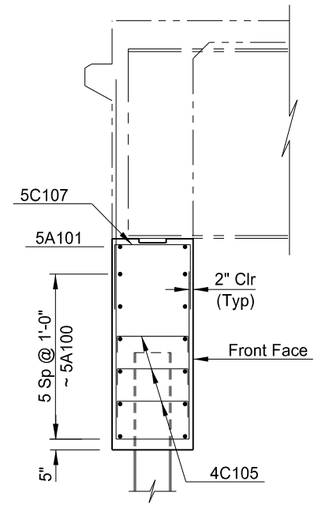
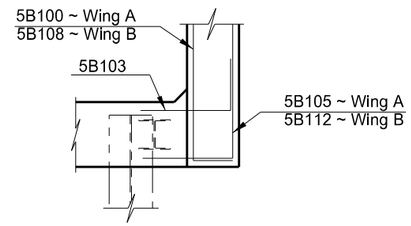
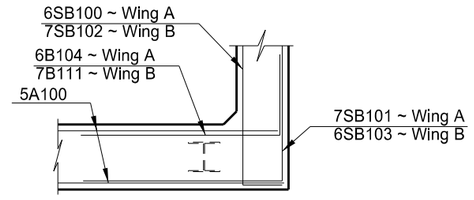


A-A



B-B



C-C

NOTES:

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BF = Back Face

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QUANTITIES (ONE ABUTMENT)

SEE DWG 29-059.264-9

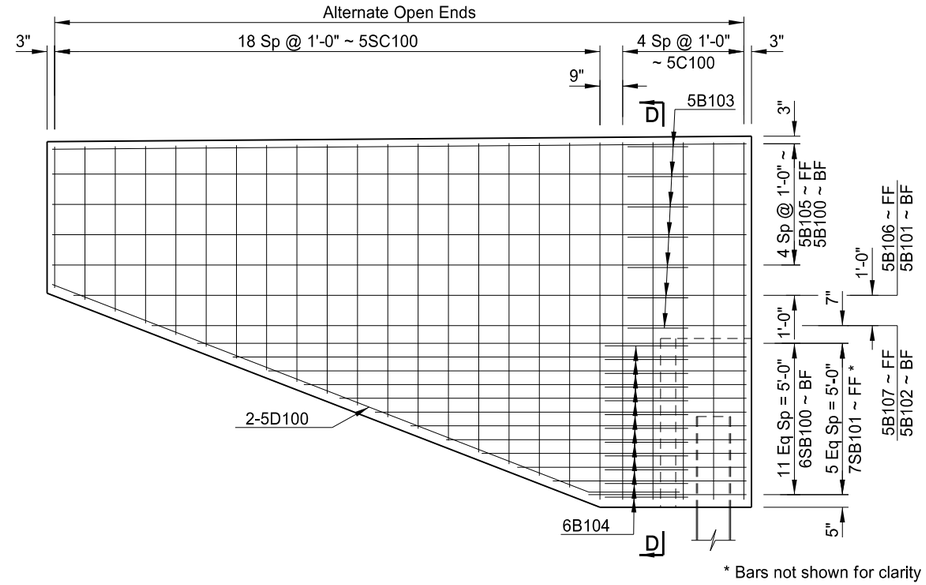
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

(SHOWING REINFORCING)

ABUTMENT DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	9



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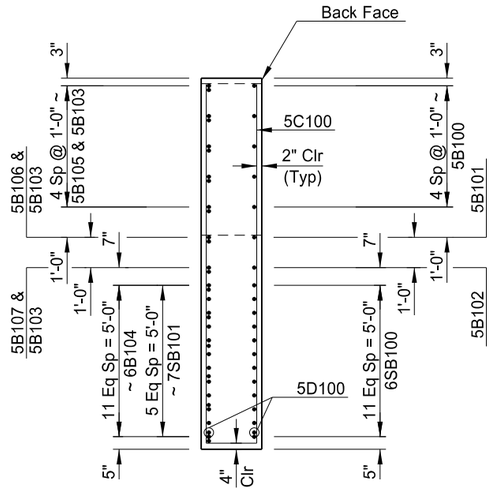
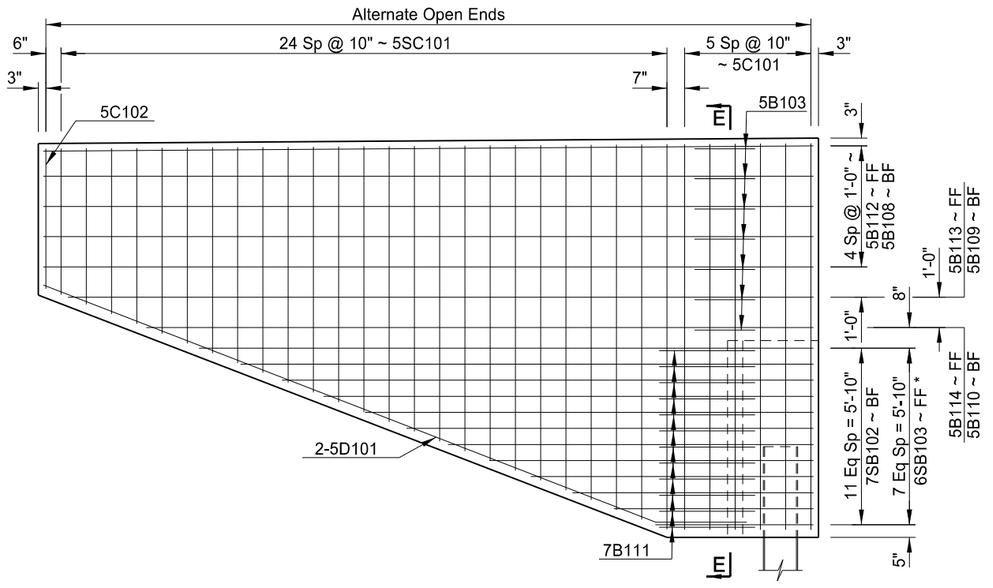
WING A ELEVATION



D-D



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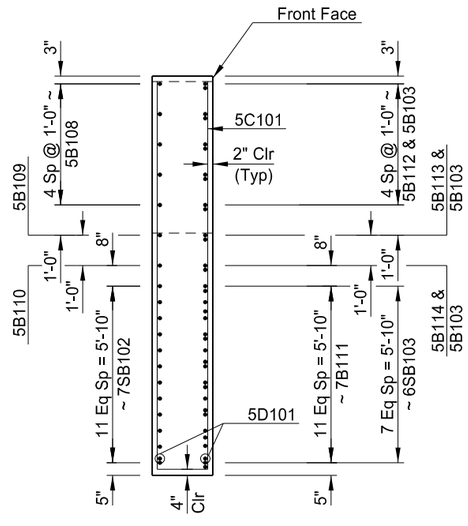
WING B ELEVATION



E-E

NOTES:

FF = Front Face
BF = Back Face

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QUANTITIES	(ONE ABUTMENT)
CLASS AE-3 CONCRETE	64.1 CY
REINFORCING STEEL	7,192 LBS

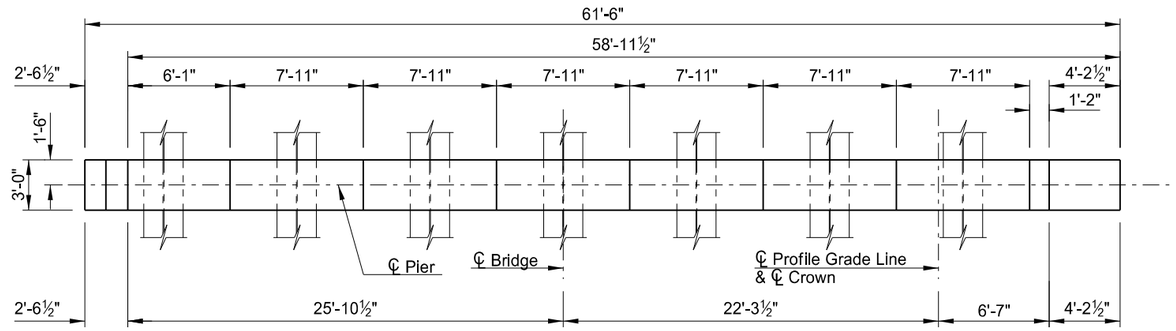
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

(SHOWING REINFORCING)

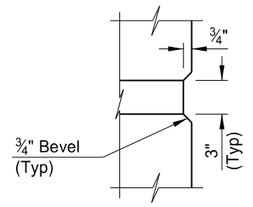
ABUTMENT DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

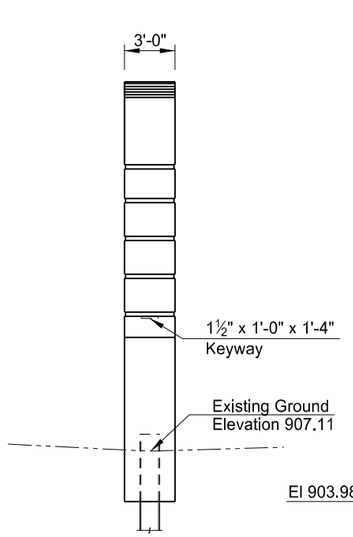
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	10



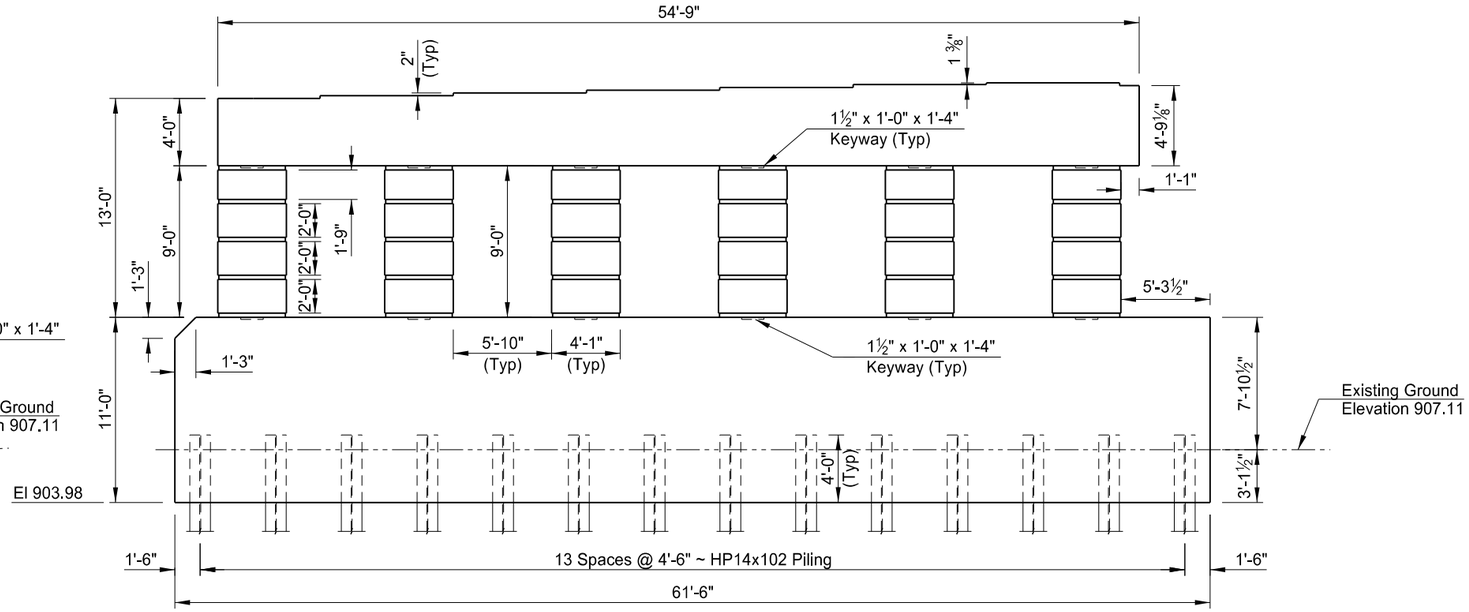
PLAN



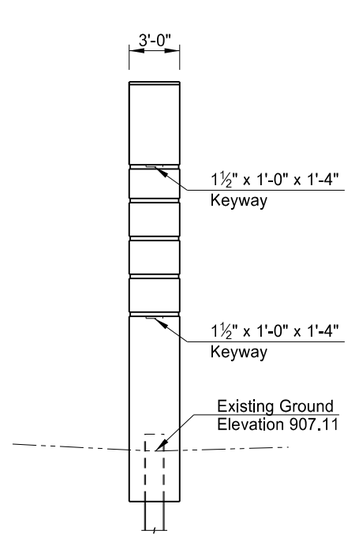
DETAIL "A"



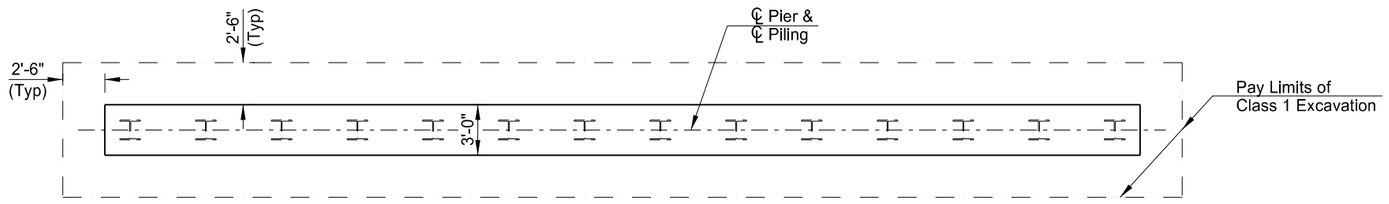
END VIEW
(North)



ELEVATION



END VIEW
(South)



A-A

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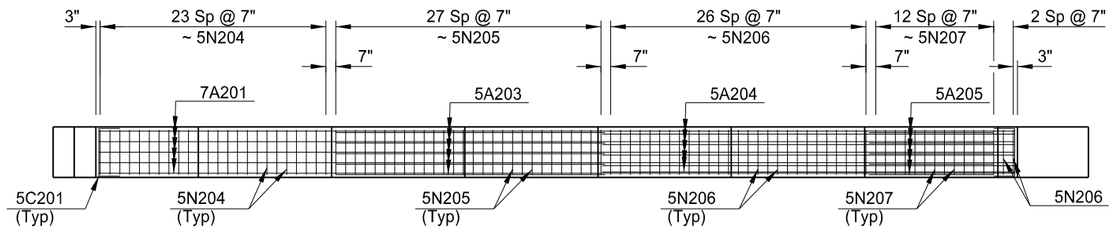
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

(SHOWING DIMENSIONS)

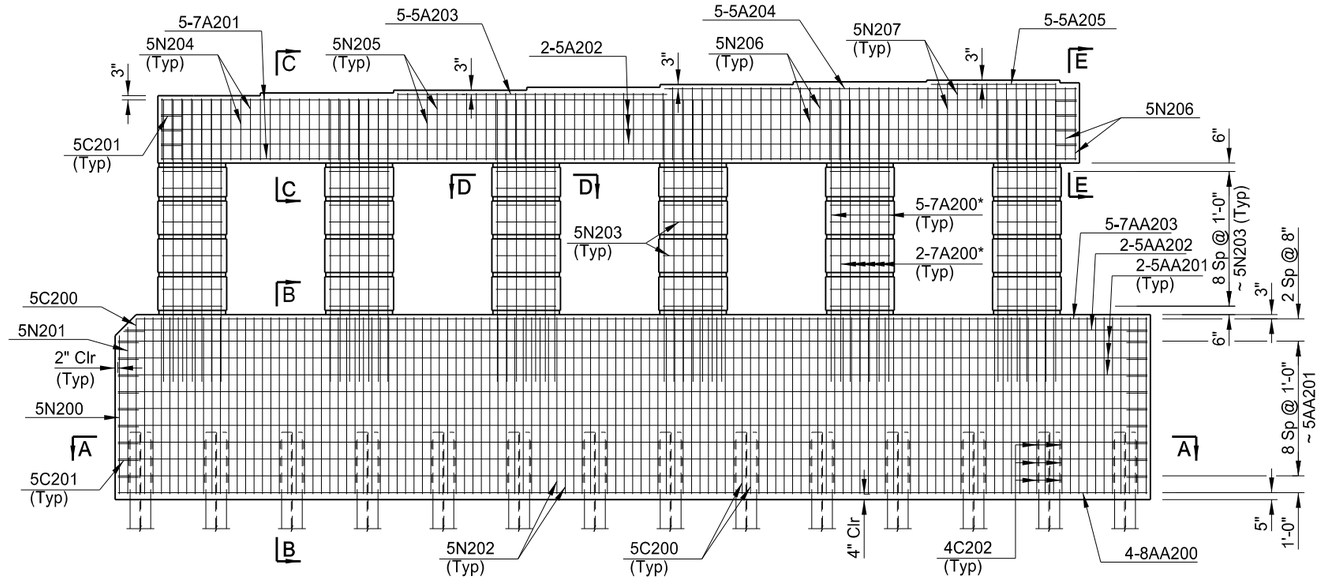
PIER DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

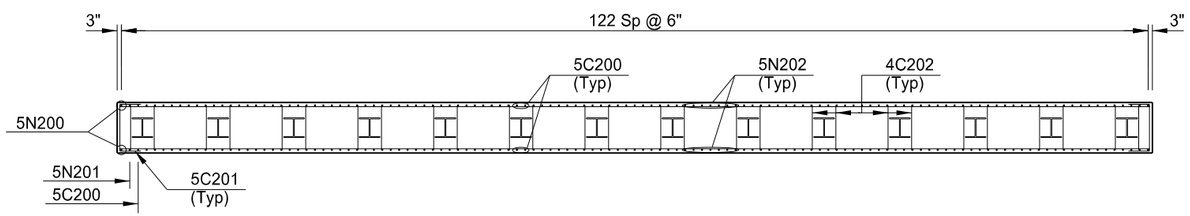
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	11



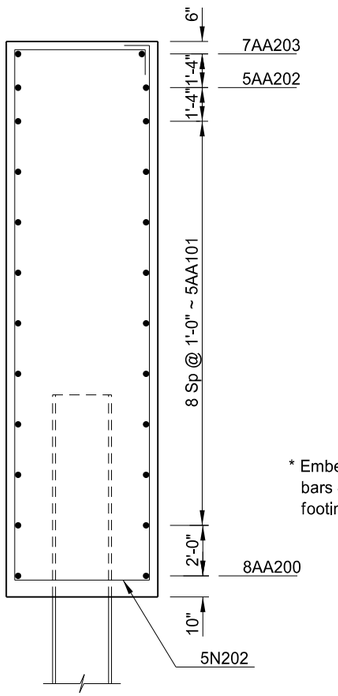
PLAN



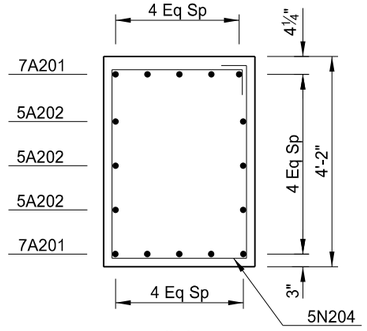
ELEVATION



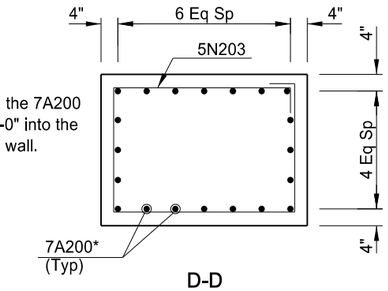
A-A



B-B

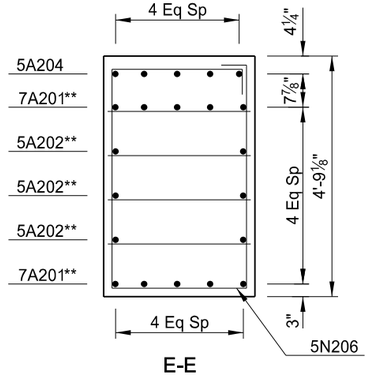


C-C



D-D

* Embed the 7A200 bars 4'-0" into the footing wall.



E-E

** Terminate the marked bars with rebar couplers (south end only). Field cut the marked bars so that 2" clear cover remains from the end of any coupler. Cap the exposed side of all couplers to facilitate future use in bridge widening. Include couplers in the price bid for "Reinforcing Steel-Grade 60".

QUANTITIES	
REINFORCING STEEL-GRADE 60	16,355 LBS
CLASS AE-3 CONCRETE	137.5 CY

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

(SHOWING REINFORCING)

PIER DETAILS

23 U.S.C. 409
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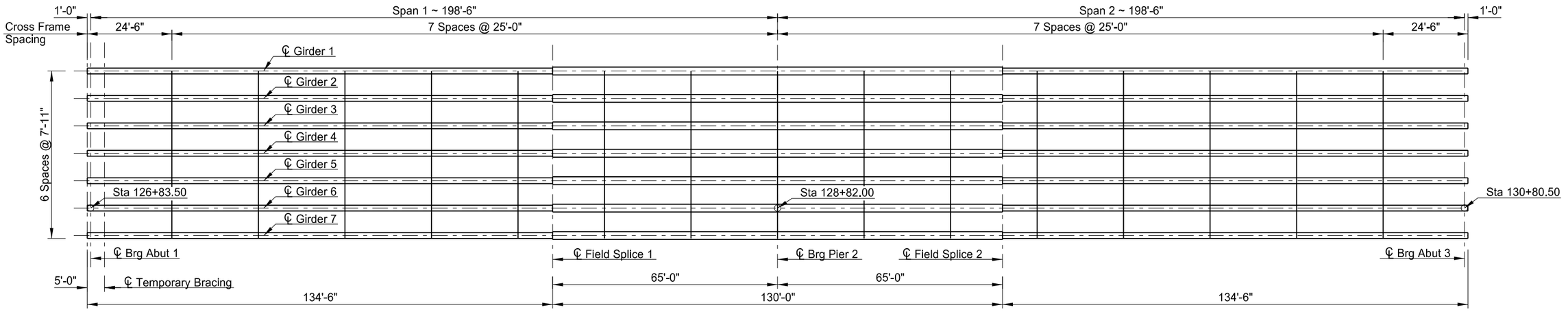
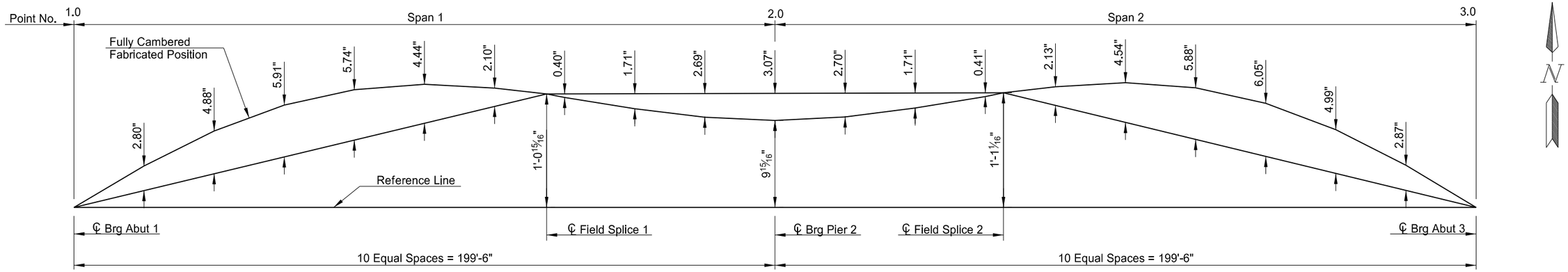
STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	12



PLAN



SHOP CAMBER DIAGRAM

SHOP CAMBER DEAD LOAD DEFLECTION TABLE

POINT NO.	GIRDERS 1-7 (INCHES)
1.00	0.00
1.10	2.83
1.20	5.14
1.30	6.60
1.40	7.06
1.50	6.59
1.60	5.27
1.67	4.06
1.70	3.50
1.80	1.72
1.90	0.46
2.00	0.00
2.10	0.49
2.20	1.80
2.30	3.61
2.33	4.19
2.40	5.42
2.50	6.78
2.60	7.28
2.70	6.80
2.80	5.29
2.90	2.92
3.00	0.00

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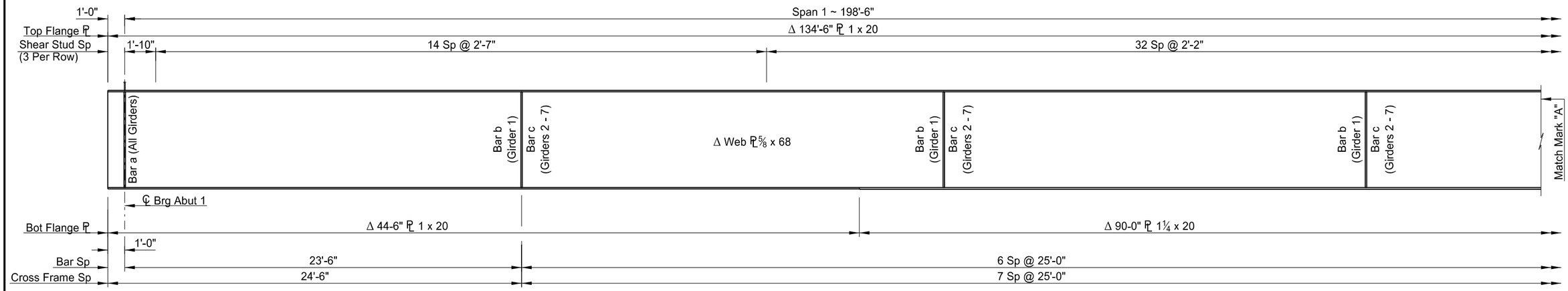
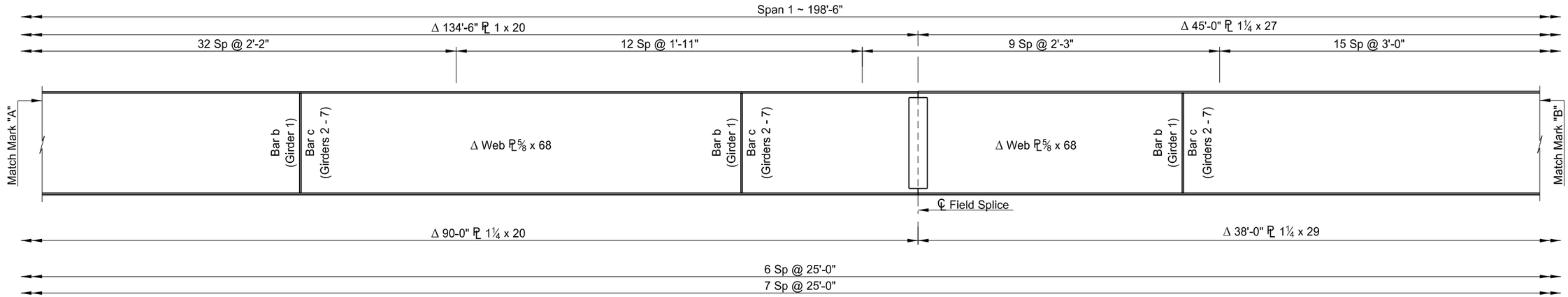
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

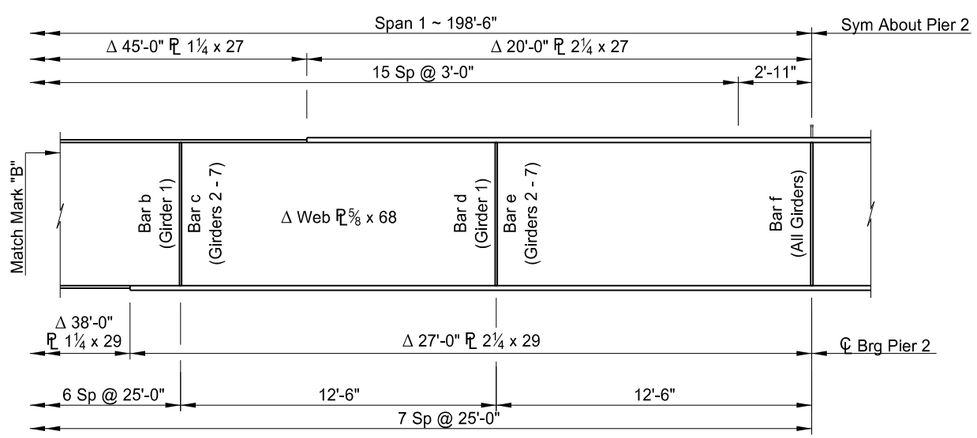
FRAMING PLAN &
SHOP CAMBER DIAGRAM

23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	13







NOTES:

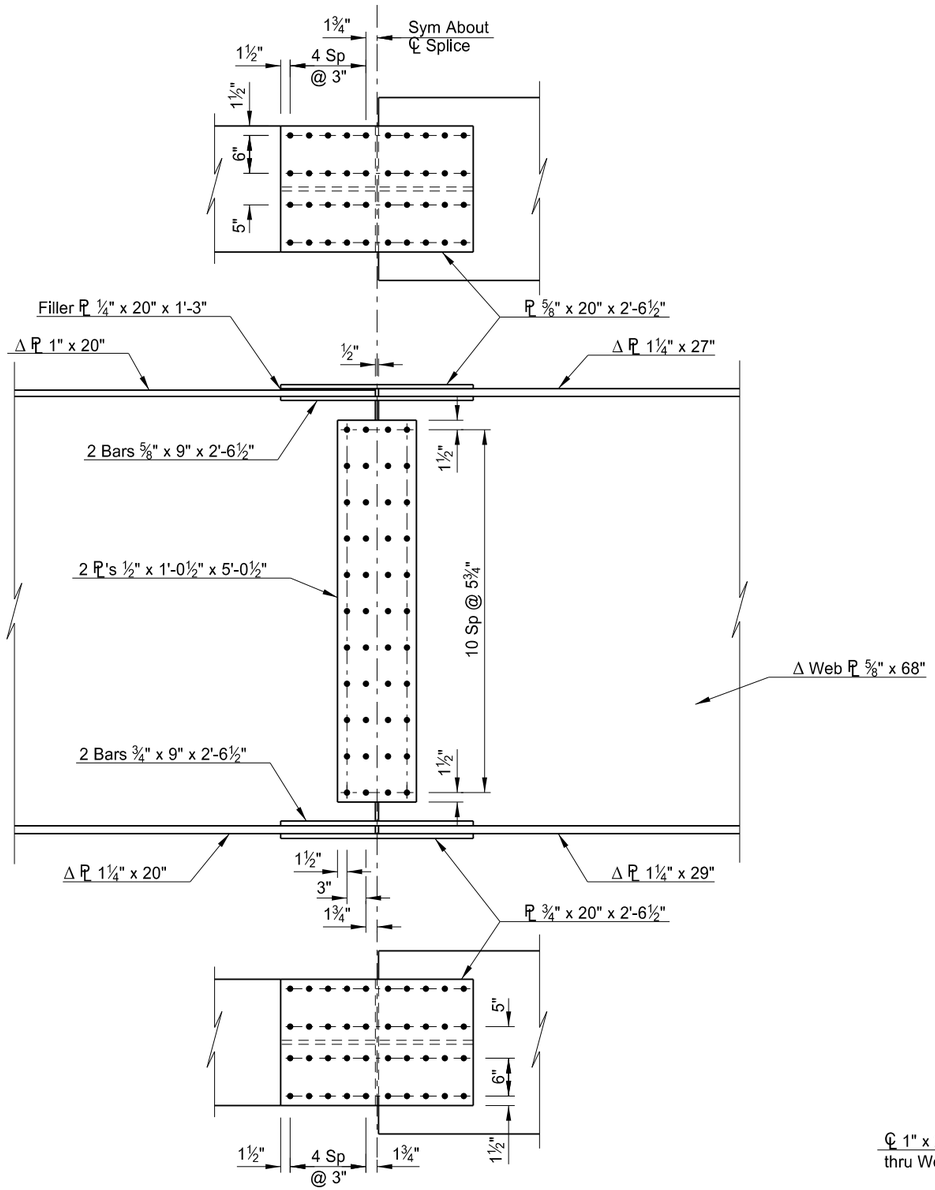
1. The elevation details shown represent Girder No. 1 in a seven girder bridge. Other girders are similar.
2. Perform Charpy V-notch toughness test on all main load carrying members subject to tensile stress indicated by Δ.
3. All dimensions shown are horizontal.

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

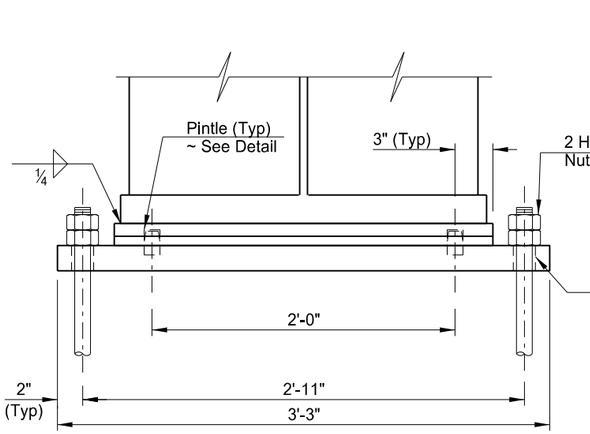
GIRDER ELEVATION

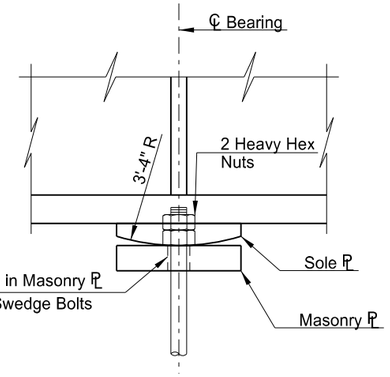
23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	14



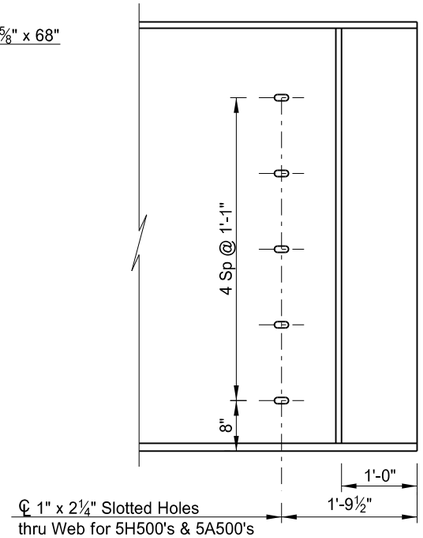
FIELD SPLICE



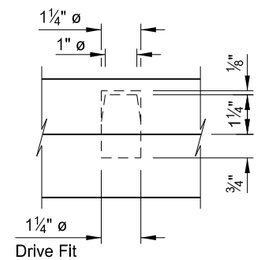


Sole ℙ ~ ℙ 1½" x 12" x 2'-6"
Masonry ℙ ~ ℙ 2" x 12" x 3'-3"
Swedge Bolts ~ 1½" ø x 1'-9"

PIER BEARING DETAILS



GIRDER END DETAIL



PINTLE DETAIL

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

FIELD SPLICE, BEARING & GIRDER END DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
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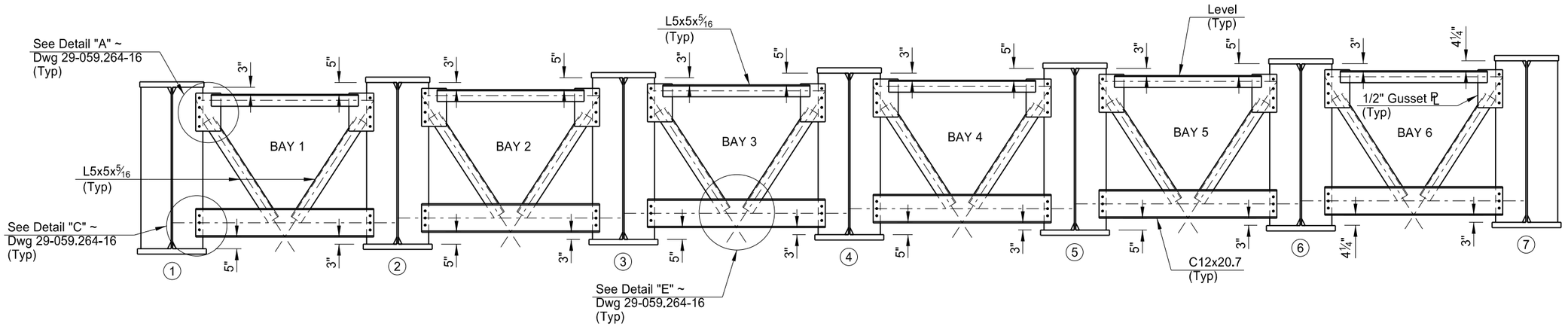
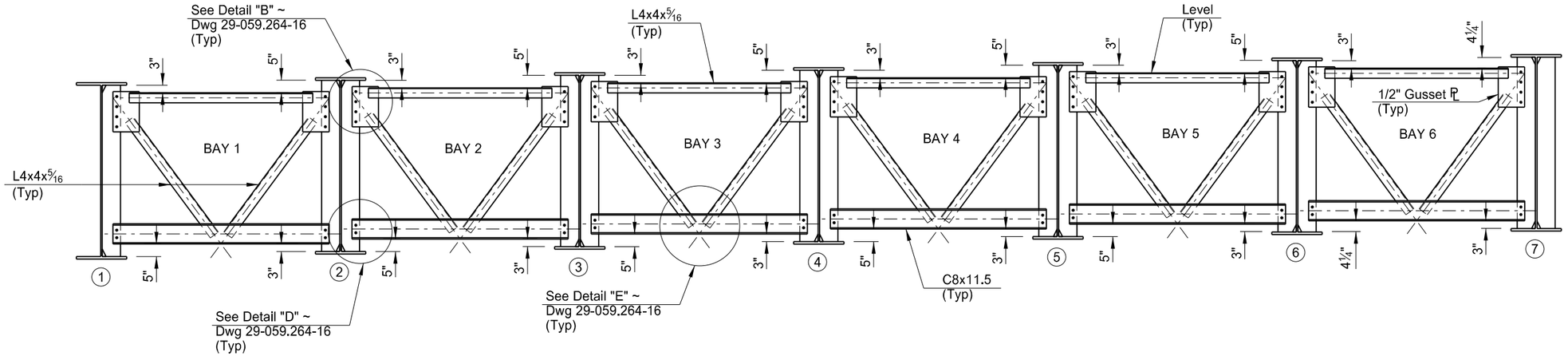


PIER CROSS FRAME



INTERMEDIATE CROSS FRAME

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

GIRDER DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
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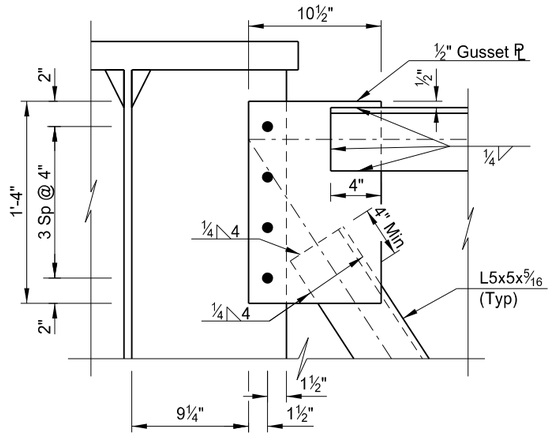
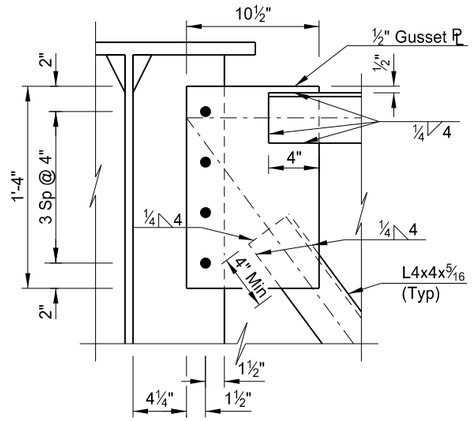
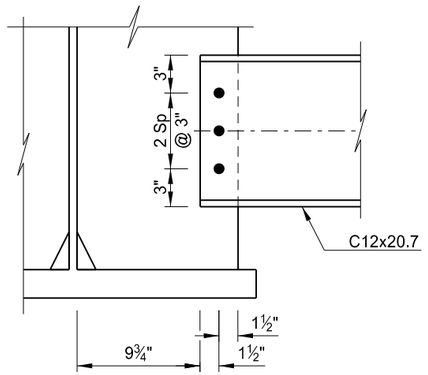


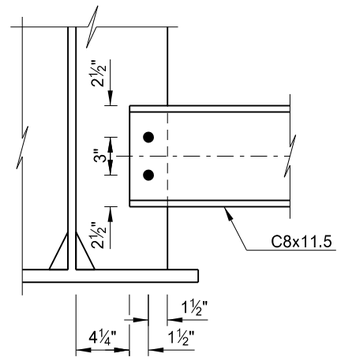
DETAIL A



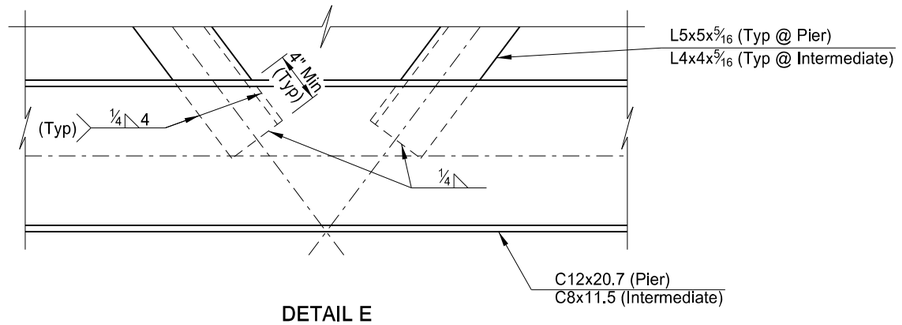
DETAIL B



DETAIL C



DETAIL D



DETAIL E

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NOTES:

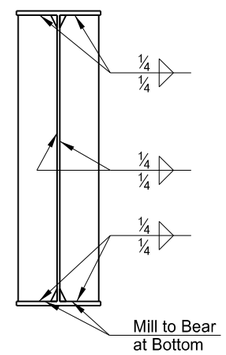
1. See Dwg 29-059.264-15 for location of Details A-H.
2. The Contractor has the option to replace the gusset plate welds with bolts. Show the configuration of the connection in the structural steel shop drawing submittal. Submit calculations stamped by a licensed professional engineer for approval.

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

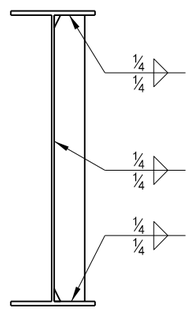
GIRDER DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

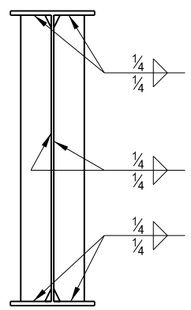
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	17



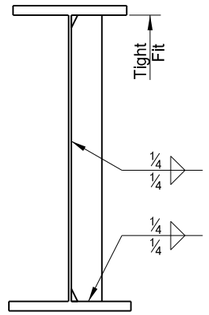
(Bar 9¼" x ⅞")
BAR a



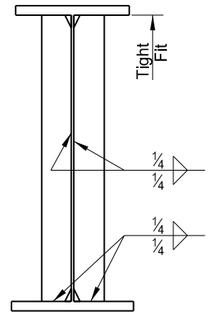
(Bar 7¼" x ½")
BAR b



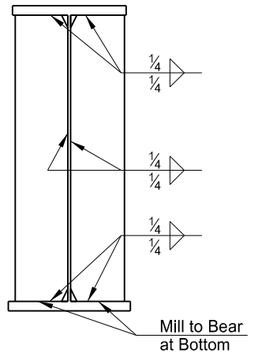
(Bar 7¼" x ½")
BAR c



(Bar 7¼" x ½")
BAR d

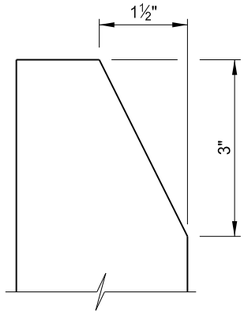


(Bar 7¼" x ½")
BAR e

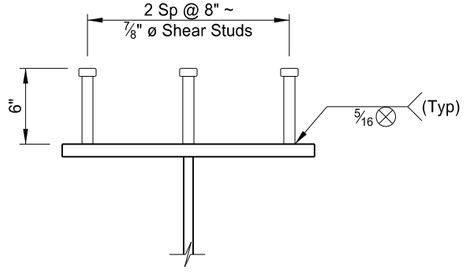


(Bar 12¾" x 1⅛")
BAR f

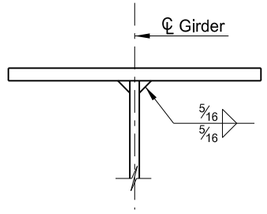
BAR DETAILS



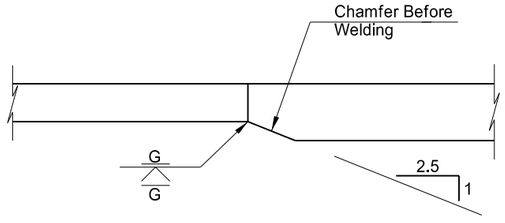
STIFFENER CLIP DETAIL



SHEAR STUD DETAIL



TYPICAL FLANGE TO WEB WELD DETAIL



SHOP FLANGE SPLICE DETAIL

NOTE:
Due to beam fabrication tolerances, a stud height other than that shown may be required. After the beams have been installed and the tops of the beams have been surveyed, the Contractor will verify that the 6" high shear studs, when installed, will protrude a minimum of 2" above the bottom mat of deck slab reinforcement and a minimum of 3" below the top of deck slab. If the shear stud does not meet these requirements, the Contractor will provide one that does.

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

GIRDER DETAILS

23 U.S.C. 409
NDDOT Reserves All Objections

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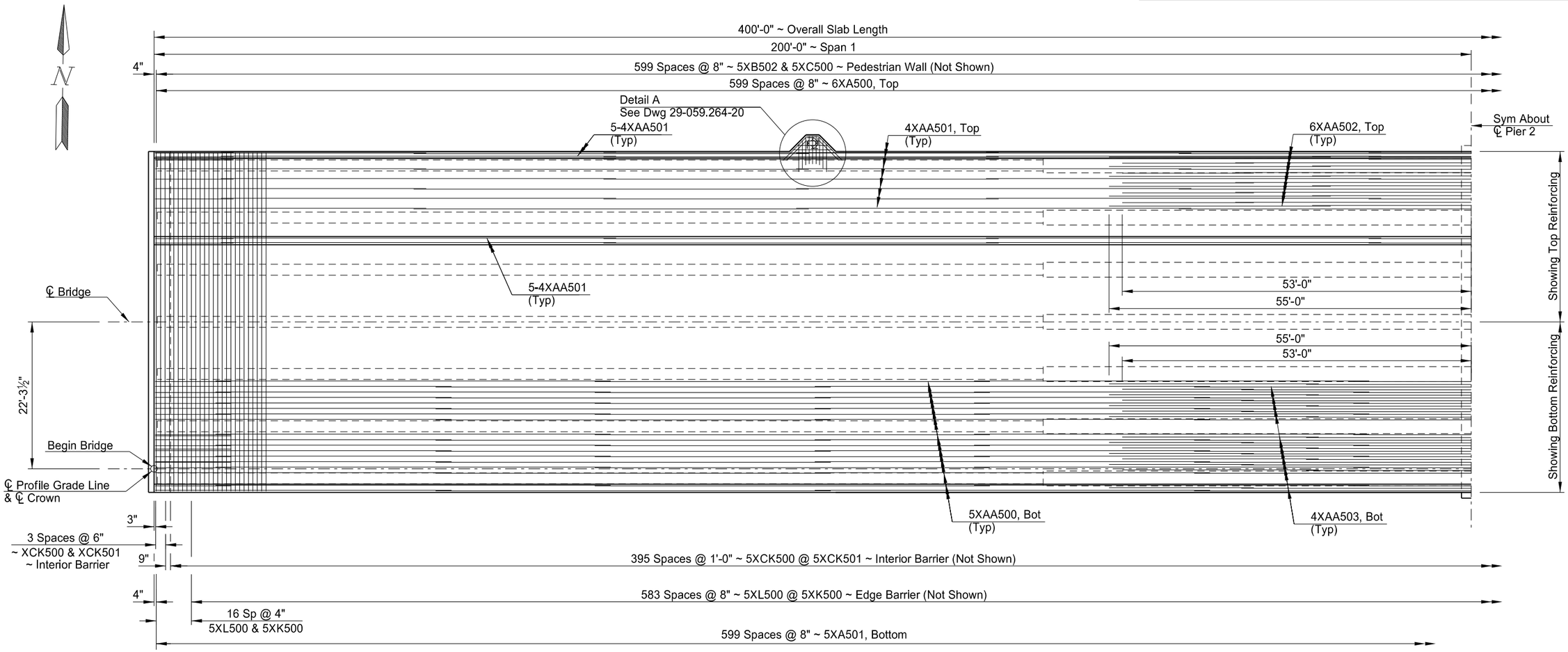
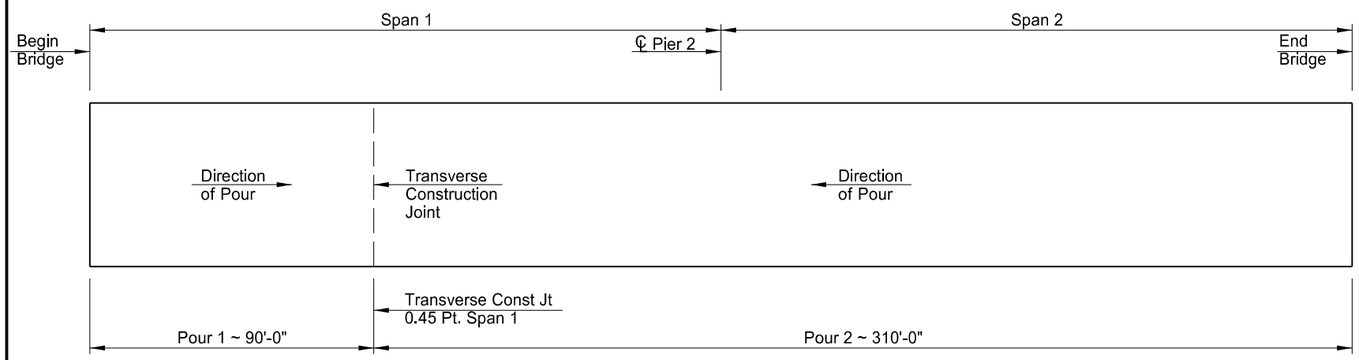
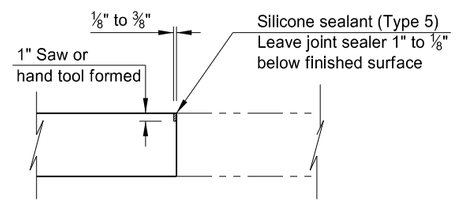
	ND	SU-8-984(153)156	170	18



HALF PLAN



DECK POURING SEQUENCE



Include the cost for the transverse construction joint in the unit price bid item "Class AAE-3 Concrete"

TRANSVERSE CONSTRUCTION JOINT DETAIL

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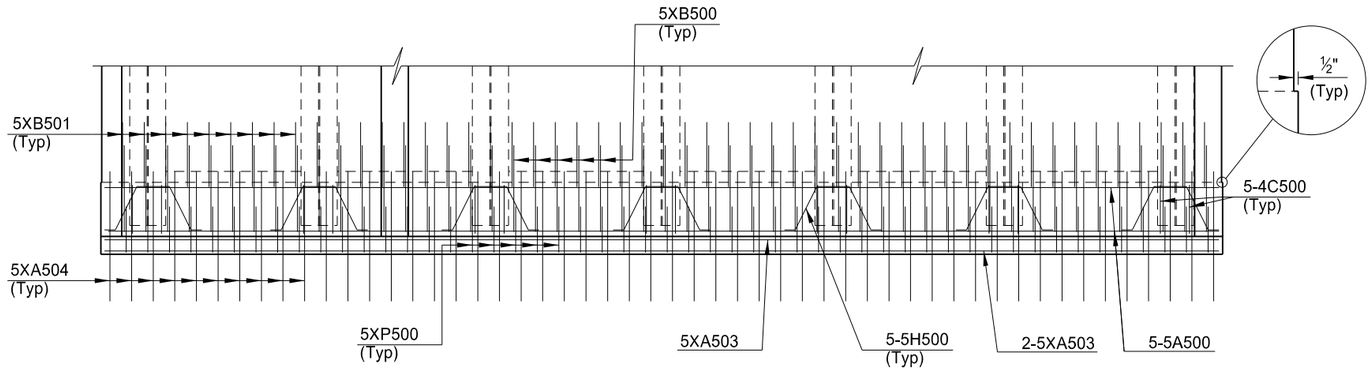
QUANTITIES

SEE DWG 29-059.264-20

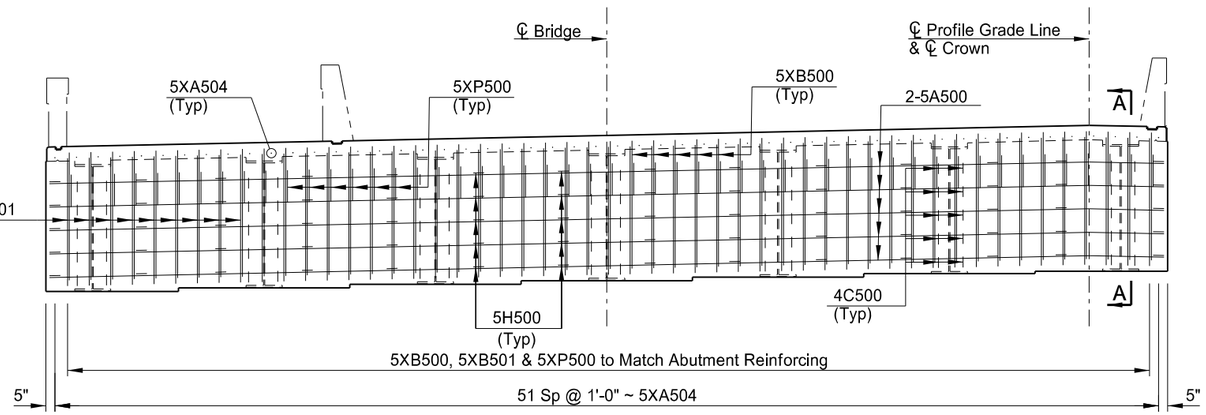
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

HALF SLAB LAYOUT

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	19

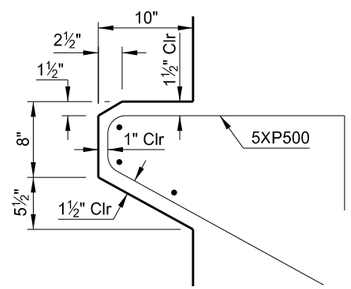


PLAN



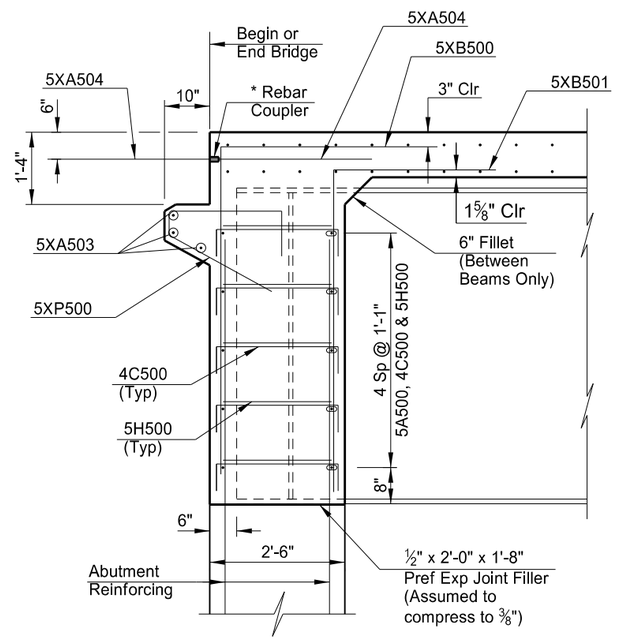
(APPROACH LIP NOT SHOWN)

ELEVATION



APPROACH LIP DETAIL

* Use approved mechanical connectors for the couplers capable of developing 125% of the reinforcing steel specified yield strength. Provide epoxy coated couplers according to Section 836.02 A and repair any damaged epoxy coating according to Section 612.04E.



A-A

NOTE:

Do not install the 5XA504 bars into the approach slab until all of the foundation fill is in place.

QUANTITIES

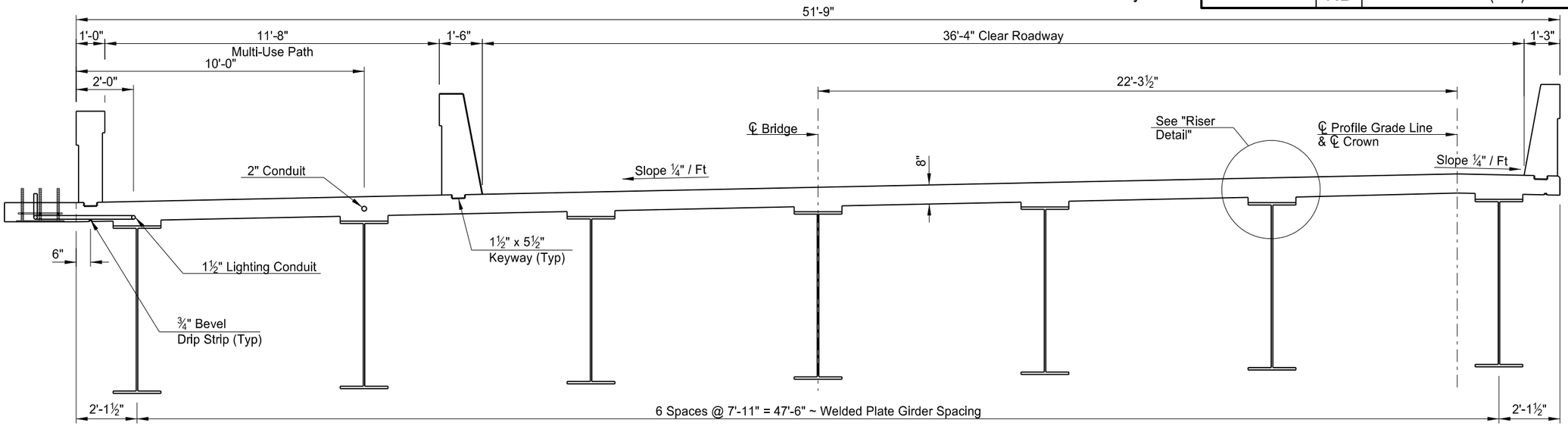
SEE DWG 29-059.264-20

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

END BEAM DETAILS

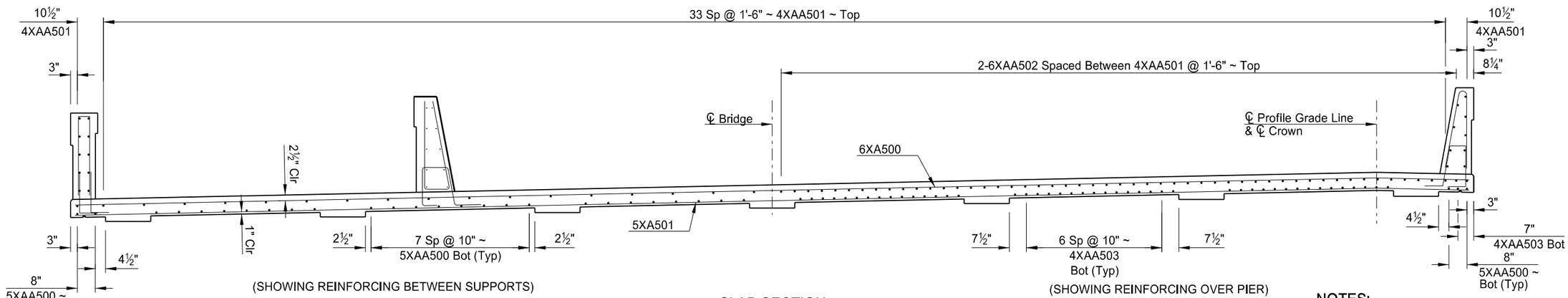
23 U.S.C. 409
NDDOT Reserves All Objections

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	20



(SHOWING DIMENSIONS)

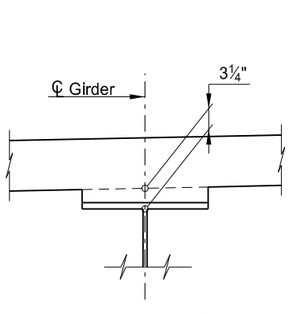
SLAB SECTION



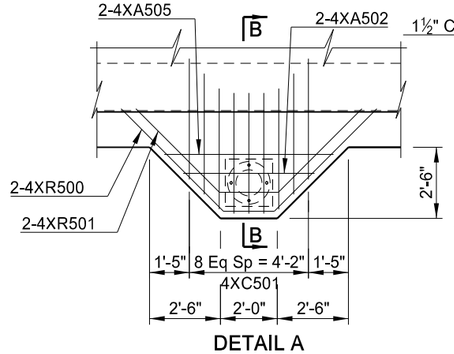
(SHOWING REINFORCING BETWEEN SUPPORTS)

SLAB SECTION

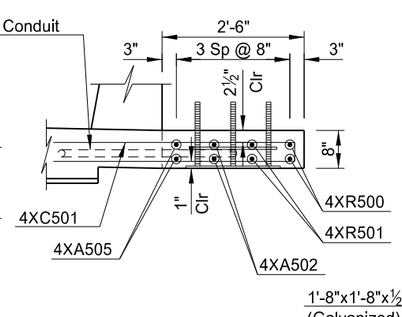
(SHOWING REINFORCING OVER PIER)



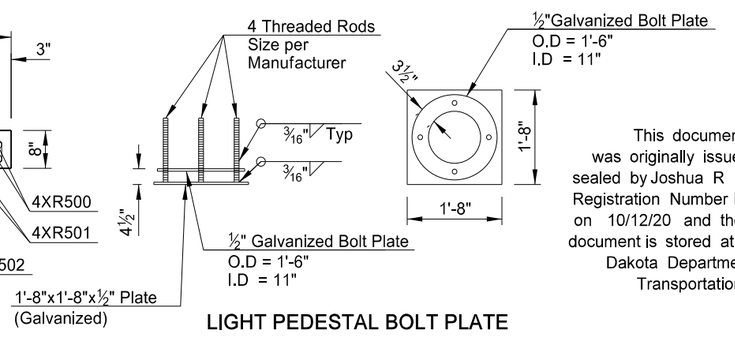
RISER DETAIL



DETAIL A



B-B



LIGHT PEDESTAL BOLT PLATE

NOTES:

Inlcude the cost of the light pedestal bolt plate in the unit price bid item "Class AAE-3 Concrete"

QUANTITIES	
CLASS AAE-3 CONCRETE	746.7 CY
REINFORCING STEEL	1,882 LBS
REINFORCING STEEL (EPOXY)	157,843 LBS

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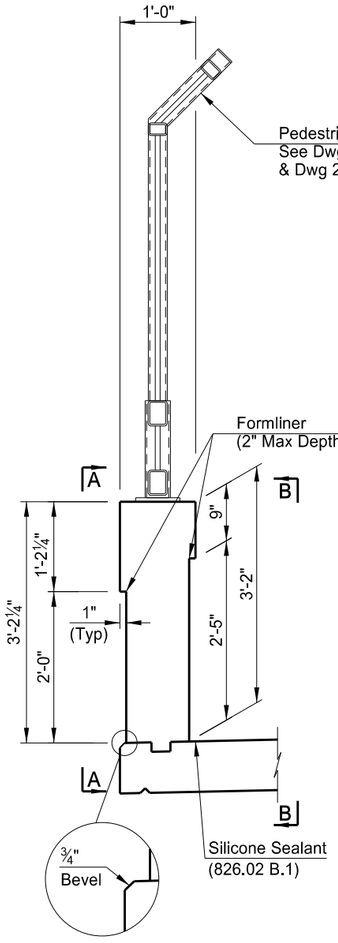
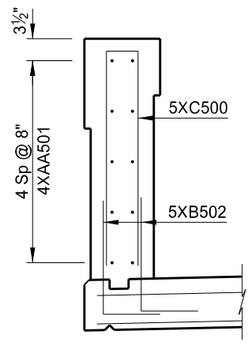
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

SLAB SECTION

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	21

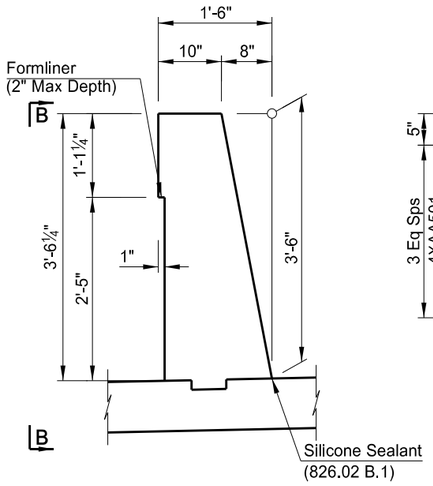
23 U.S.C. 409
NDDOT Reserves All Objections

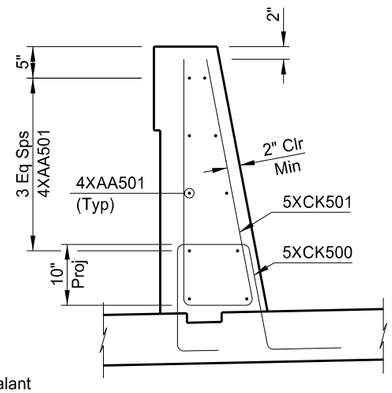




SHOWING DIMENSIONS SHOWING REINFORCING

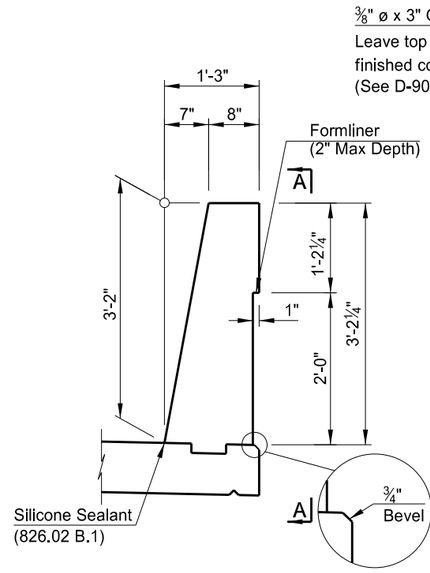
PEDESTRIAN WALL DETAIL

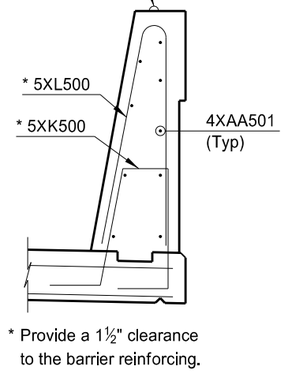




SHOWING DIMENSIONS SHOWING REINFORCING

INTERIOR BARRIER DETAIL

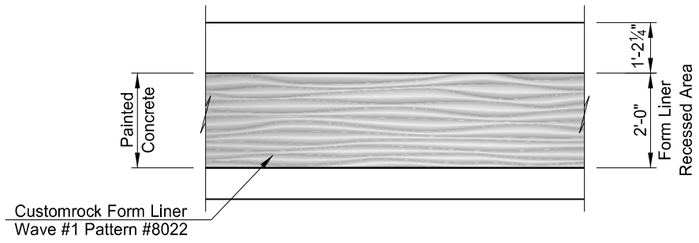




* Provide a 1½" clearance to the barrier reinforcing.

SHOWING DIMENSIONS SHOWING REINFORCING

EDGE BARRIER DETAIL



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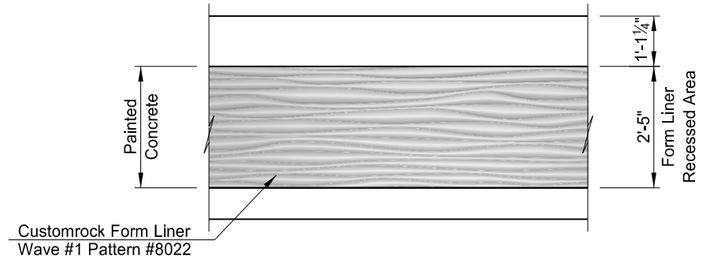

B-B

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

BARRIER DETAILS

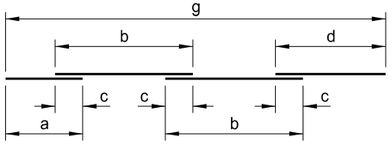
23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	22

BILL OF REINFORCING STEEL, GRADE 60

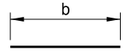
LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS								
					a	b	c	d	e	f	g	h	k
PIER	8	AA200	4	65'-0"		40'-0"	3'-10"	25'-0"	1		61'-2"		
	5	AA201	18	64'-2"		40'-0"	3'-0"	24'-2"	1		61'-2"		
	5	AA202	2	63'-9"		40'-0"	3'-0"	23'-9"	1		60'-9"		
	7	AA203	5	64'-7"		40'-0"	4'-2"	24'-7"	1		60'-5"		
	7	A200	180	16'-9"		16'-9"							
	7	A201	10	54'-5"		54'-5"							
	5	A202	5	54'-5"		54'-5"							
	5	A203	5	15'-10"		15'-10"							
	5	A204	5	24'-7"		24'-7"							
	5	A205	5	7'-7"		7'-7"							
	5	C200	28	23'-8"		10'-6"	2'-8"	10'-6"					
	5	C201	27	5'-8"		1'-6"	2'-8"	1'-6"					
	4	C202	84	3'-8"		6"	2'-8"	6"					
	5	N200	1	25'-2"	2'-8"	9'-5"	6"					0	12
	5	N201	1	26'-2"	2'-8"	9'-11"	6"					0	12
	5	N202	91	27'-4"	2'-8"	10'-6"	6"					0	12
	5	N203	54	13'-2"	2'-6"	3'-7"	6"					0	12
	5	N204	24	13'-8"	2'-8"	3'-8"	6"					0	12
	5	N205	28	14'-4"	2'-8"	4'-0"	6"					0	12
	5	N206	29	14'-8"	2'-8"	4'-2"	6"					0	12
	5	N207	13	15'-0"	2'-8"	4'-4"	6"					0	12

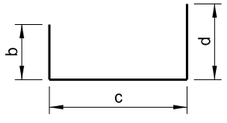


c = Lap Splice (typ)
e = # of "b" Length Pieces in a Set
Total Length per Set = e x b + a + d

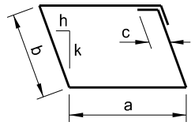
(AA)



(A)



(C)



(N)

NOTES:

1. Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the contract unit price.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. The "f" dimension indicates the inside radius unless otherwise noted.

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

REINFORCING BAR LIST & DETAILS

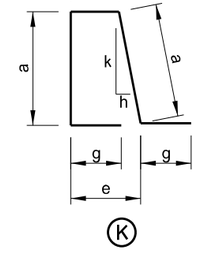
BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	23

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
ABUTMENTS	5	A100	24	55'-6"		55'-6"							
	5	A101	4	34'-0"		34'-0"							
	5	B100	10	24'-6"		1'-7"	22'-11"						
	5	B101	2	23'-6"		1'-7"	21'-11"						
	5	B102	2	20'-11"		1'-7"	19'-4"						
	5	B103	28	5'-9"		2'-0"	3'-9"						
	6	B104	24	10'-0"		2'-9"	7'-3"						
	5	B105	10	26'-8"		3'-9"	22'-11"						
	5	B106	2	25'-8"		3'-9"	21'-11"						
	5	B107	2	23'-1"		3'-9"	19'-4"						
	5	B108	10	27'-0"		1'-7"	25'-5"						
	5	B109	2	26'-0"		1'-7"	24'-5"						
	5	B110	2	23'-5"		1'-7"	21'-10"						
	7	B111	24	10'-6"		2'-9"	7'-9"						
	5	B112	10	29'-2"		3'-9"	25'-5"						
	5	B113	2	28'-2"		3'-9"	24'-5"						
	5	B114	2	25'-7"		3'-9"	21'-10"						
	5	C100	10	25'-0"		11'-8"	1'-8"	11'-8"					
	5	C101	12	26'-10"		12'-7"	1'-8"	12'-7"					
	5	C102	2	10'-8"		4'-6"	1'-8"	4'-6"					
	7	C103	56	24'-4"		11'-1"	2'-2"	11'-1"					
	5	C104	56	24'-8"		11'-3"	2'-2"	11'-3"					
	4	C105	84	3'-2"		6"	2'-2"	6"					
	7	C106	24	18'-4"		5'-1"	2'-2"	11'-1"					
	5	C107	30	8'-2"		3'-0"	2'-2"	3'-0"					
	5	C108	6	18'-9"		5'-4"	2'-2"	11'-3"					
	5	D100	4	22'-5"		3'-0"	19'-5"					12.0	4.6
	5	D101	4	25'-1"		3'-0"	22'-1"					12.0	4.6
	6	SB100	2	155'-6"	1'-7"	4'-11"	1'-7"	17'-10"	11				
	7	SB101	2	111'-9"	7'-3"	4'-11"	7'-3"	17'-10"	5				
	7	SB102	2	169'-0"	1'-7"	4'-11"	1'-7"	20'-1"	11				
	6	SB103	2	158'-0"	7'-3"	4'-11"	7'-3"	20'-1"	7				
	5	SC100	2	338'-10"	1'-8"	4'-6"	11'-8"	1'-8"	18				
	5	SC101	2	475'-0"	1'-8"	4'-9"	12'-7"	1'-8"	24				

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
SUPERSTRUCTURE REGULAR	5	A500	20	51'-6"	51'-6"								
	4	C500	140	3'-2"		6"	2'-2"	6"					
	5	H500	70	7'-0"	0'-6"	2'-3"	1'-6"					6.0	12.0
SUPERSTRUCTURE EPOXY	6	XA500	600	51'-5"	51'-5"								
	5	XA501	600	51'-5"	51'-5"								
	4	XA502	4	4'-8"	4'-8"								
	5	XA503	6	51'-6"	51'-6"								
	5	XA504	208	3'-0"	3'-0"								
	4	XA505	4	6'-0"	6'-0"								
	5	XB500	104	10'-0"		6'-0"	4'-0"						
	5	XB501	92	8'-9"		5'-9"	3'-0"						
	5	XB502	1200	3'-2"		10"	2'-4"						
	5	XC500	600	6'-1"		2'-10"	5"	2'-10"					
	4	XC501	18	8'-10.5"		4'-3"	4.5"	4'-3"					
	5	XCK500	404	5'-9"	8"	1'-5"	9"	1'-5"	1'-6"		3.25"	2.3	12.0
	5	XCK501	404	7'-2.5"	0"	3'-2"	10.5"	3'-2"	0"		1'-0"	2.3	12.0
	5	XK500	618	4'-11"	1'-6"	7"			10"		8"	2.2	12.0
	5	XL500	618	5'-11"	9"	2'-9"	5"			1.25"		2.2	12.0
	5	XP500	104	5'-6"	5"	2'-1"	2'-2"			1.25"	10"	12.0	6.5
	4	XR500	4	12'-1"	5'-2"	1'-9"	5'-2"					12.0	12.0
	4	XR501	4	10'-7"	4'-3"	2'-1"	4'-3"					12.0	12.0
	5	XAA500	52	416'-7"	11'-7"	60'-0"	2'-5"	45'-0"	6		399'-8"		
	4	XAA501	65	413'-1"	11'-11"	60'-0"	1'-11"	41'-2"	6		399'-8"		
	6	XAA502	68	113'-8"	22'-0"	60'-0"	2'-10"	31'-8"	1		108'-0"		
	4	XAA503	44	111'-10"	22'-0"	60'-0"	1'-11"	29'-10"	1		108'-0"		



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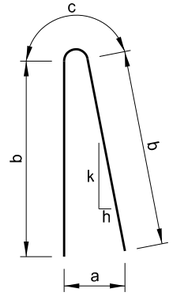
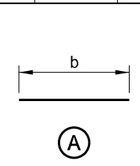


L

23 U.S.C. 409
NDDOT Reserves All Objections

NOTES:

1. Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the contract unit price.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. Turn adjacent "AA" bars end for end so that the splice locations are staggered.
5. The "f" dimension indicates the inside radius unless otherwise noted.
6. An "X" preceding a bar designation indicates an epoxy coated bar.



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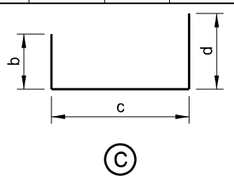

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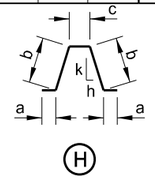

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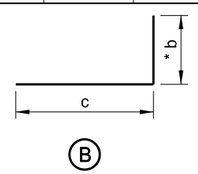
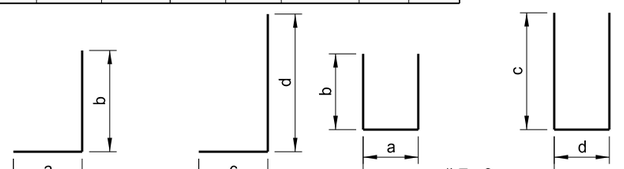
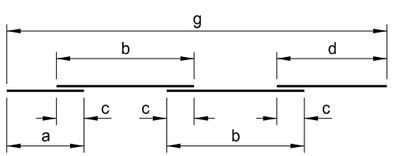


B

* b = Vertical Leg for XB500 and XB501

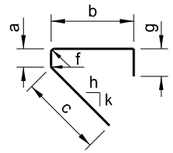


SB SC



c = Lap Splice (typ)
e = # of "b" Length Pieces in a Set
Total Length per Set = e x b + a + d

AA



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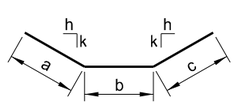

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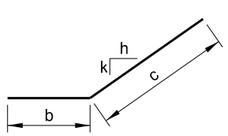
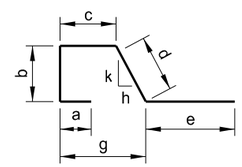


D



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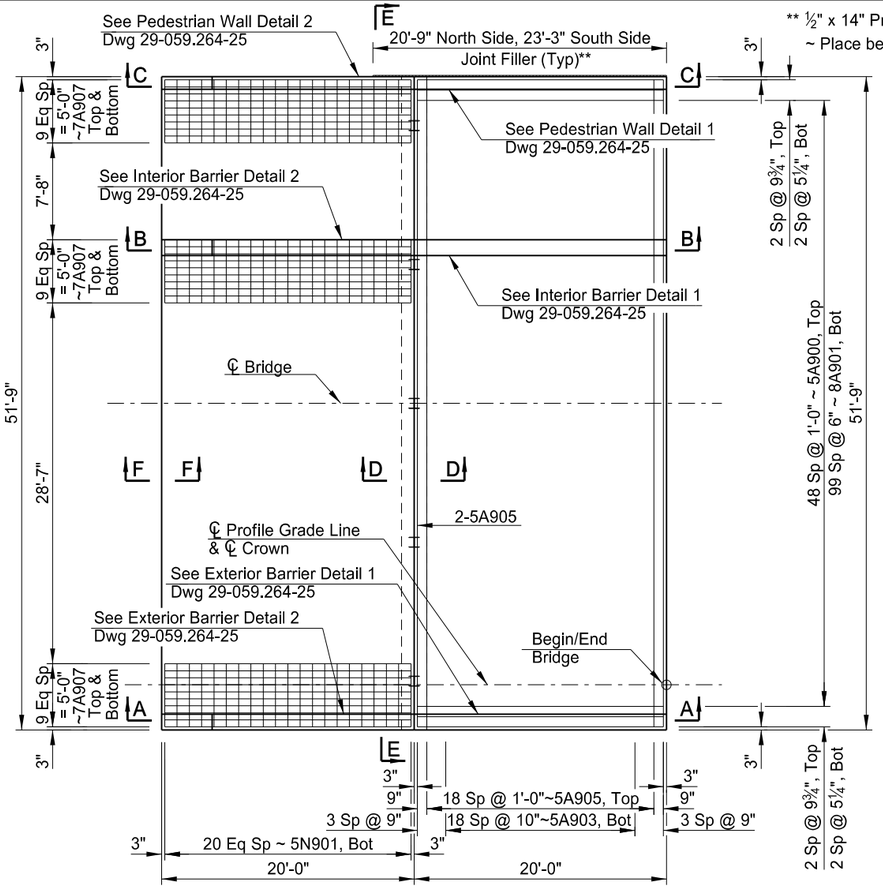
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

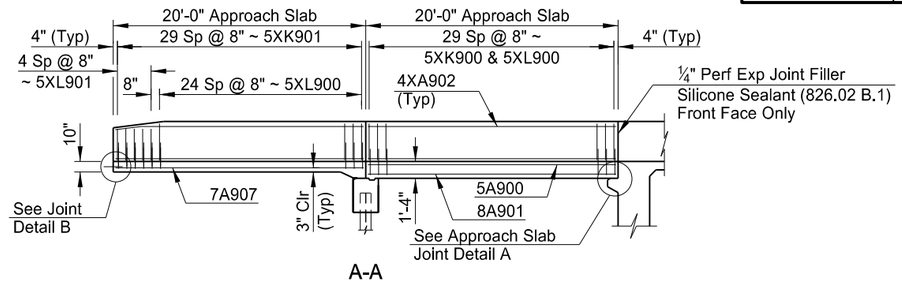
REINFORCING BAR LIST & DETAILS

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	24

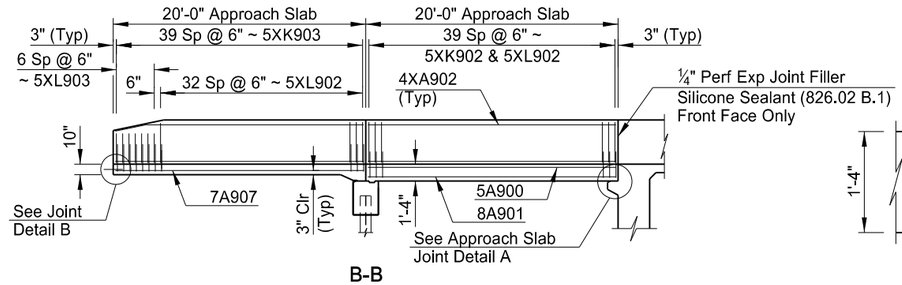
23 U.S.C. 409
NDDOT Reserves All Objections



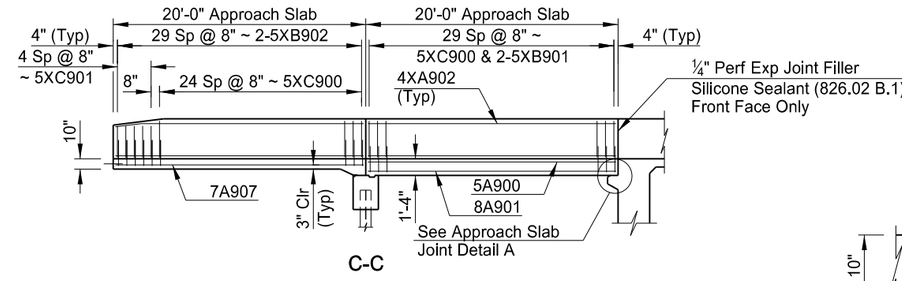
(West Approach Slab Shown, East Approach Slab Similar)
PLAN



A-A



B-B



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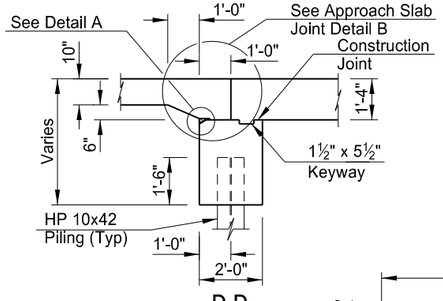

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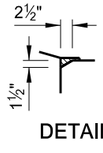
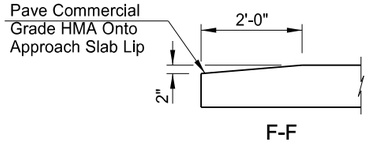


DETAIL A



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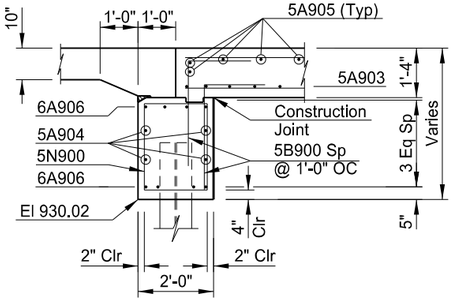
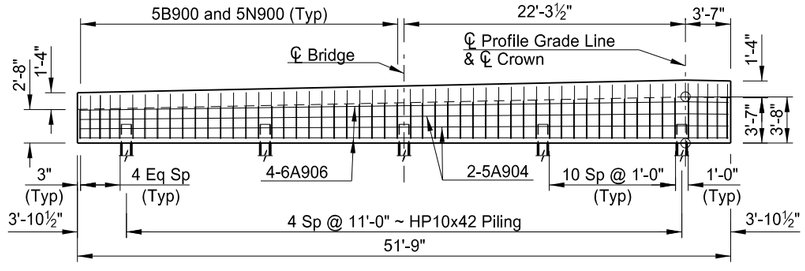
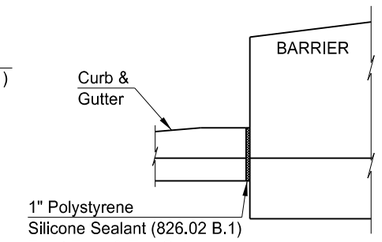


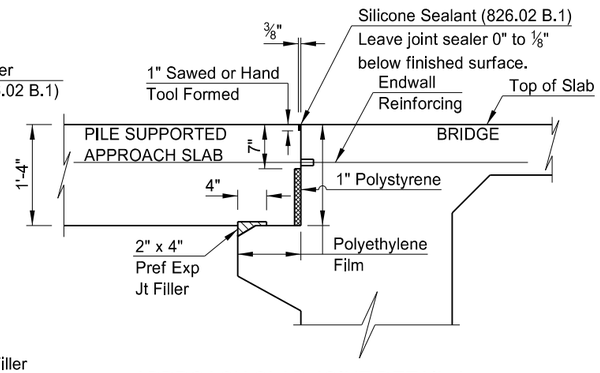
GRADE BEAM DETAIL
(Showing Reinforcing)



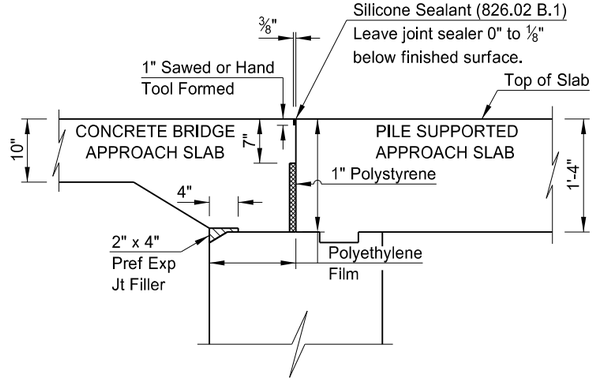
E-E



JOINT DETAIL B



APPROACH SLAB JOINT DETAIL A



APPROACH SLAB JOINT DETAIL B

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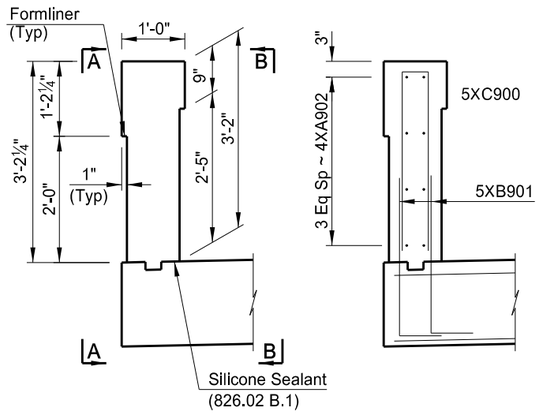
QUANTITIES
SEE DWG 29-059.264-26

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

APPROACH SLAB DETAILS

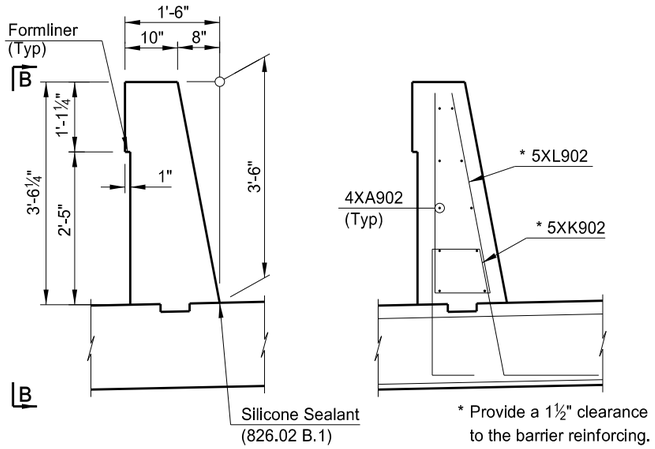
23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	25



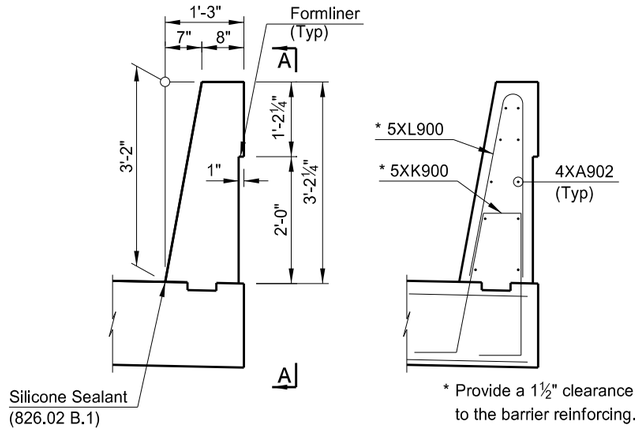
SHOWING DIMENSIONS SHOWING REINFORCING

PEDESTRIAN WALL DETAIL 1
(PILE SUPPORTED APPROACH SLAB)



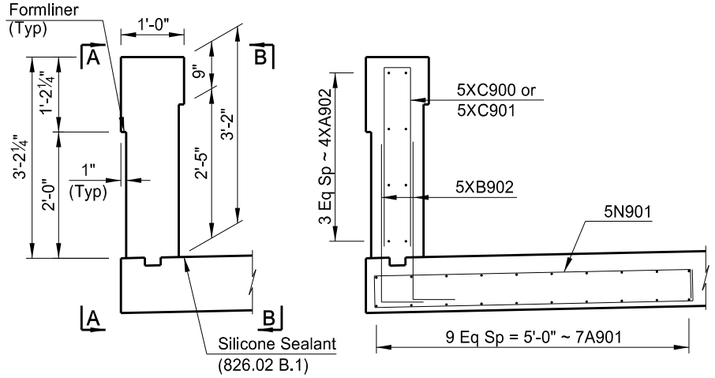
SHOWING DIMENSIONS SHOWING REINFORCING

INTERIOR BARRIER DETAIL 1
(PILE SUPPORTED APPROACH SLAB)



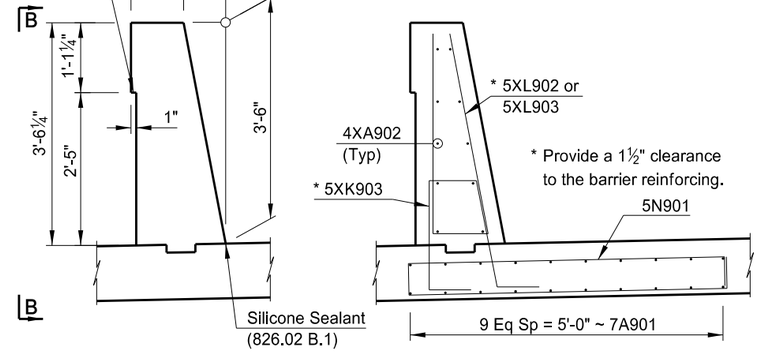
SHOWING DIMENSIONS SHOWING REINFORCING

EDGE BARRIER DETAIL 1
(PILE SUPPORTED APPROACH SLAB)



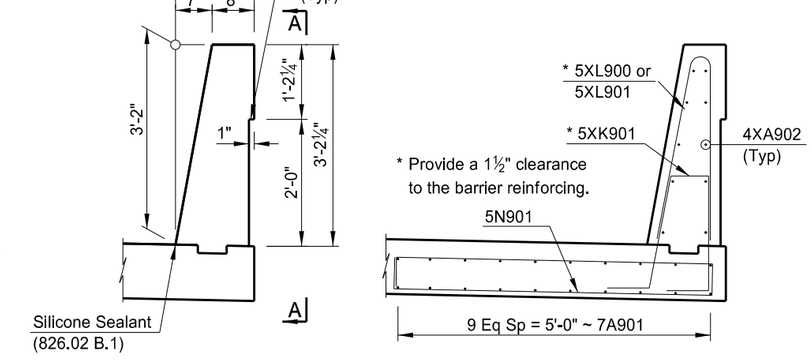
SHOWING DIMENSIONS SHOWING REINFORCING

PEDESTRIAN WALL DETAIL 2
(CONCRETE BRIDGE APPROACH SLAB)



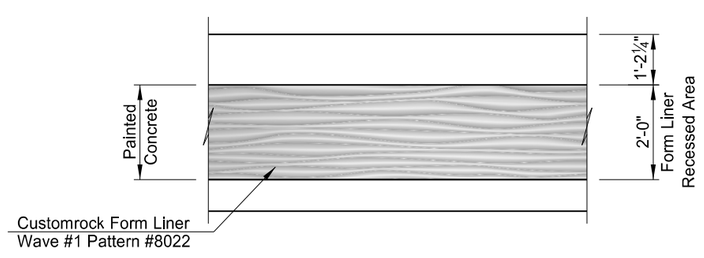
SHOWING DIMENSIONS SHOWING REINFORCING

INTERIOR BARRIER DETAIL 2
(CONCRETE BRIDGE APPROACH SLAB)

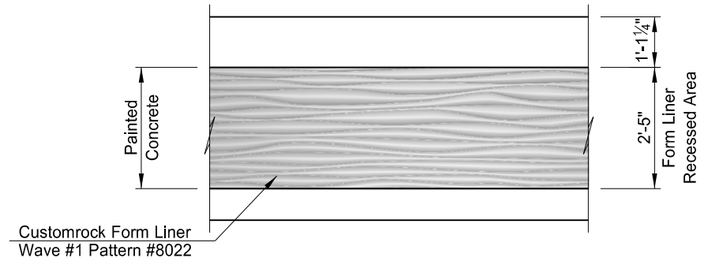


SHOWING DIMENSIONS SHOWING REINFORCING

EDGE BARRIER DETAIL 2
(CONCRETE BRIDGE APPROACH SLAB)



A-A



B-B

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QUANTITIES

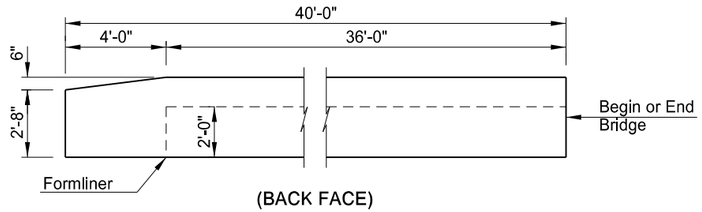
SEE DWG 29-059.264-26

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

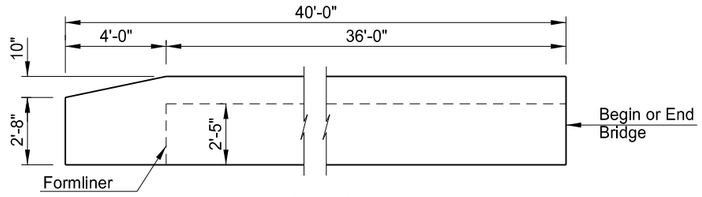
APPROACH SLAB DETAILS

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	170	26

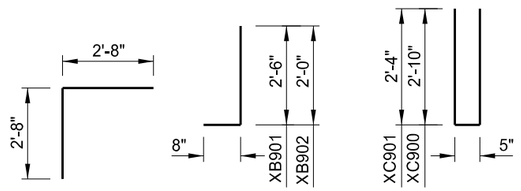
23 U.S.C. 409
NDDOT Reserves All Objections



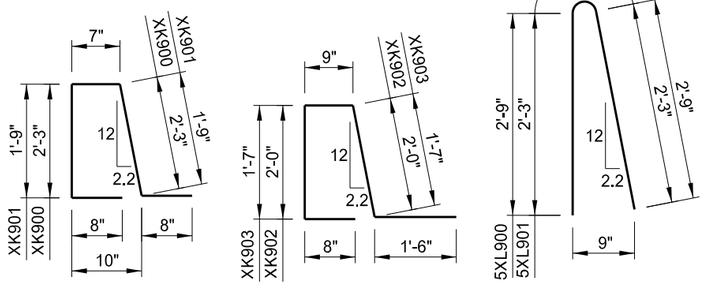
(BACK FACE)
PEDESTRIAN WALL AND EXTERIOR BARRIER ELEVATION



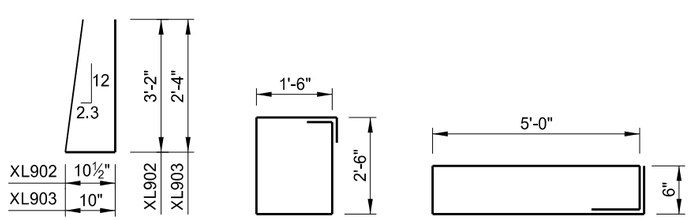
(BACK FACE)
INTERIOR BARRIER ELEVATION



B900 XB901 & XB902 XC900 & XC901

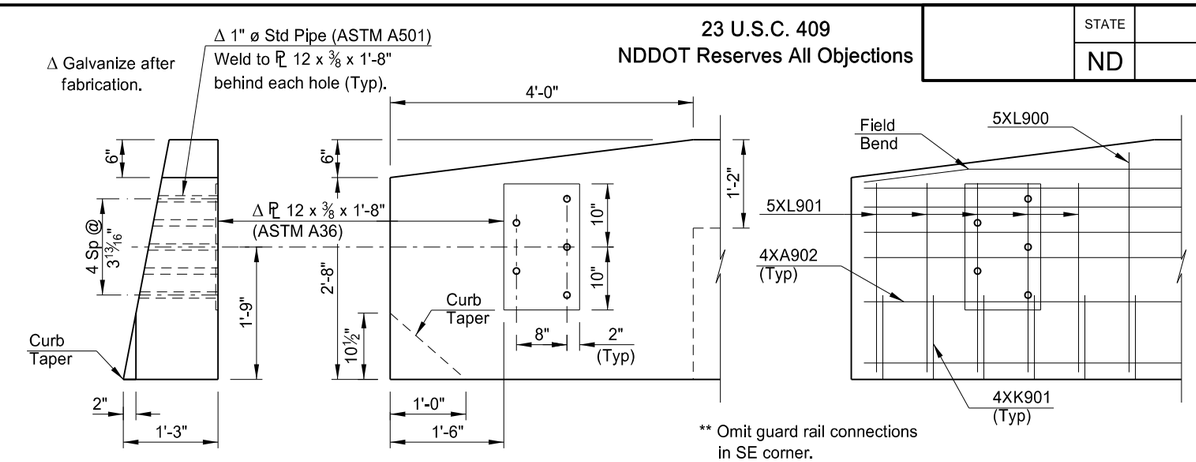


XK900 & XK901 XK902 & XK903 XL900 & XL901



XL902 & XL903 N900 N901

BENT BAR DETAILS

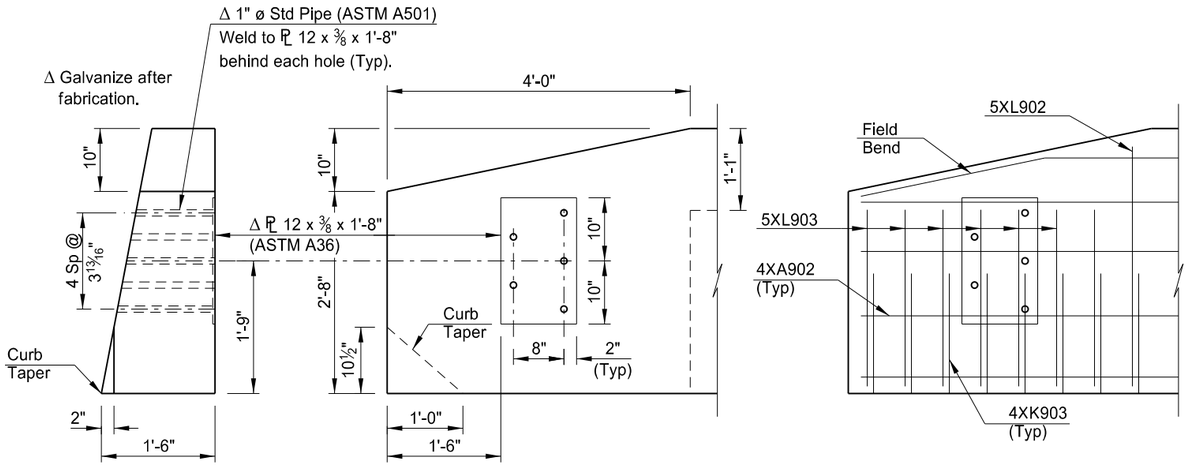


SHOWING DIMENSIONS

SHOWING REINFORCING

** Omit guard rail connections in SE corner.

(SHOWING BACK FACE)
(1 REQUIRED**)
CONNECTION PLATE DETAILS



SHOWING DIMENSIONS

SHOWING REINFORCING

(SHOWING BACK FACE)
(2 REQUIRED)
CONNECTION PLATE DETAILS

SKEW ANGLE = 0°

BAR LIST - TOTAL ONE END

SIZE	MARK	NO.	LENGTH
5	A900	53	19'-8"
8	A901	104	19'-8"
4	XA902	56	19'-8"
5	A903	25	51'-3"
5	A904	4	51'-3"
5	A905	22	51'-3"
6	A906	8	51'-3"
7	A907	60	19'-8"
5	B900	106	5'-4"
5	XB901	60	3'-2"
5	XB902	60	2'-8"
5	XC900	55	6'-1"
5	XC901	5	5'-1"
5	XK900	30	6'-5"
5	XK901	30	5'-5"
5	XK902	40	6'-11"
5	XK903	40	6'-1"
5	XL900	55	5'-11"
5	XL901	5	4'-11"
5	XL902	73	7'-2 ½"
5	XL903	7	5'-6"
5	N900	53	9'-0"
5	N901	63	12'-0"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
17,521	109.2

NOTES:

The estimated material quantities shown are for information purposes only. Provide Class AE-3 concrete and Grade 60 reinforcing steel. Provide polyethylene membrane that meets the requirements of AASHTO M 171.

Include all materials including concrete, reinforcing bars, polyethylene membrane, preformed joint filler, polystyrene, silicone sealant, and all labor required to build the 16" approach slab and barriers in the pay item "Pile Supported Approach Slab". Concrete and reinforcement required for grade beam construction shall be included in this pay item.

Include all materials including concrete, reinforcing bars, polyethylene membrane, preformed joint filler, polystyrene, silicone sealant, connection plates and pipes, and all labor required to build the 10" approach slab and barriers in the pay item "Concrete Bridge Approach Slab".

Provide Surface Finish "D" for all surfaces of the approach slab barriers where the formliner is not present.

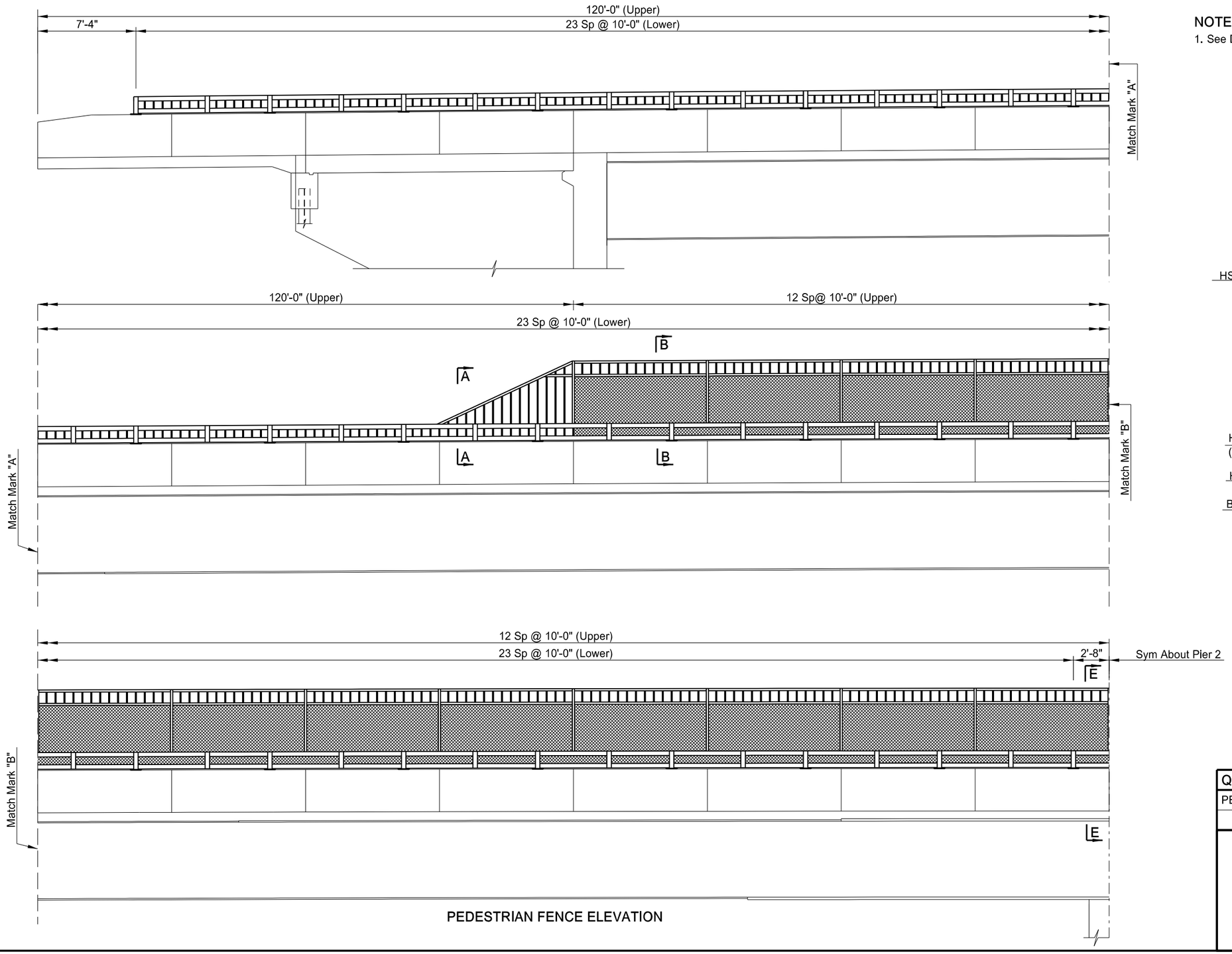
The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out.

QUANTITIES	(TOTAL)
CONCRETE BRIDGE APPROACH SLAB	230.0 SY
PILE SUPPORTED APPROACH SLAB	230.0 SY

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

APPROACH SLAB DETAILS

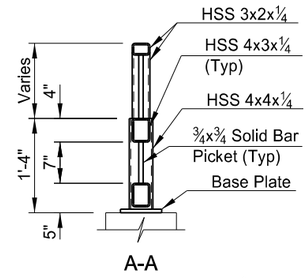
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-974(153)156	170	27



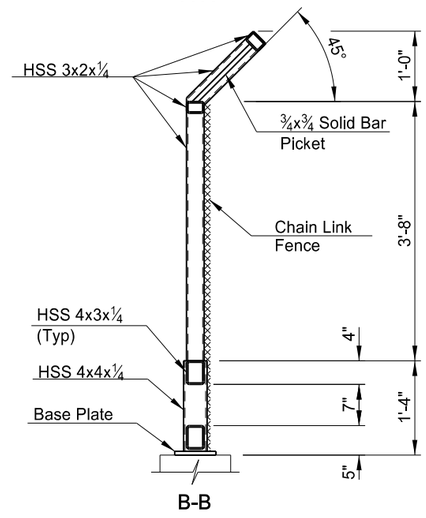
PEDESTRIAN FENCE ELEVATION

NOTES:

1. See Dwg. 29-059.264-28 Connection Details.



A-A



B-B

QUANTITIES	
PEDESTRIAN FENCE	465.3 LF

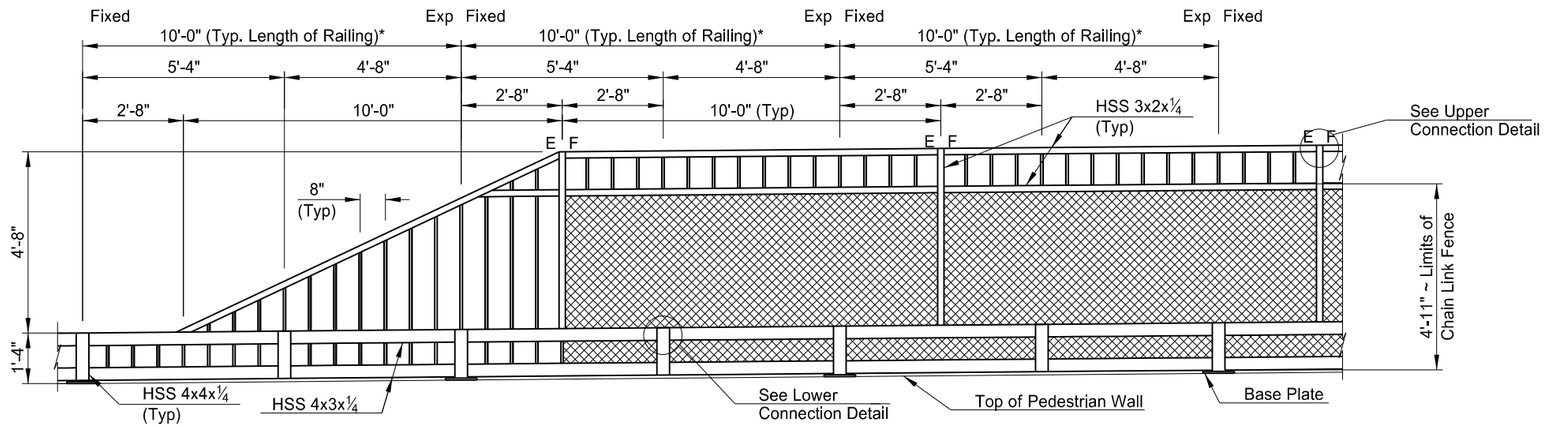
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

PEDESTRIAN FENCE LAYOUT

* A Single 5'-4" Post Space is Located at Pier 2

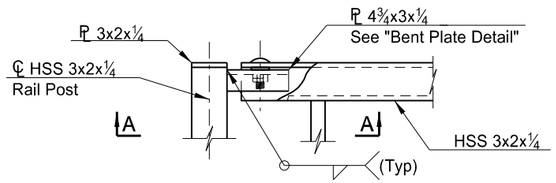
23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-974(153)156	170	28

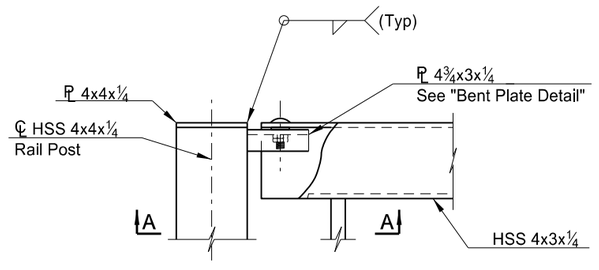


(Showing Typical Dimensions)

OUTSIDE ELEVATION OF PEDESTRIAN FENCE

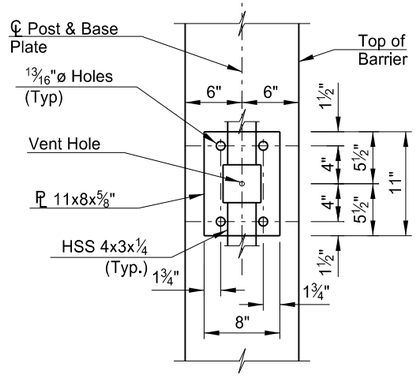


UPPER CONNECTION DETAIL

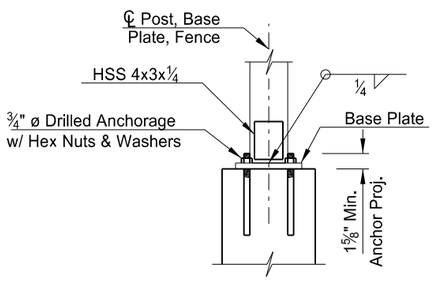


LOWER CONNECTION DETAIL

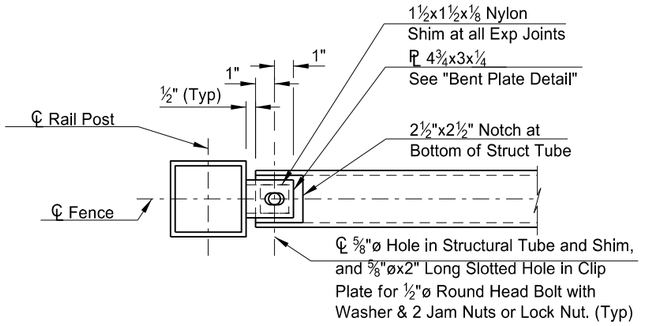
BENT PLATE DETAIL



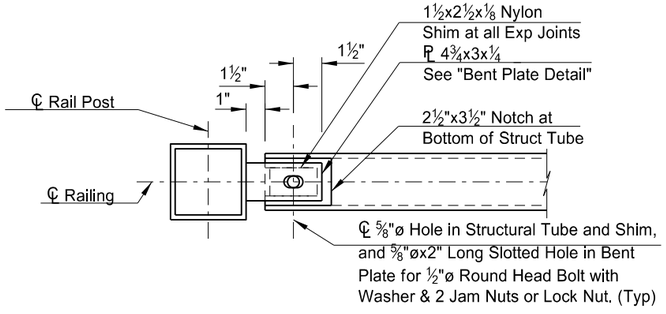
BASE PLATE PLAN



ANCHOR DETAIL



A-A



A-A @ EXPANSION JOINT

NOTES:

1. Provide anchorage, post, and rail plates that meet ASTM A 36. Provide posts and rails that meet ASTM A500 Grade B. Galvanize all steel elements after fabrication according to Section 854 of the Standard Specifications and then paint according to Special Provisions 70(20). Use Brown finish coat, color number 10076 Specification (AMS) Standard 595A. Galvanize the anchor bolts and field paint the exposed top of bolt.

2. Epoxy in ¾" Dia. Anchor bolts or place them in the concrete at the time of pouring. Provide a minimum pullout capacity of 12,000 pounds and a minimum embedment of 6" for each anchor bolt. Use anchor bolts meeting ASTM F1554, Grade 36.

3. Fabricate horizontal railing to be parallel to the slope of the top of the pedestrian wall and abutment wing. Fabricate posts and pickets to be vertical.

4. Install a Black Vinyl Chain Link Fence (2" Mesh) on the interior side of the pedestrian fence.

5. Include all pieces required for the fabrication and connection of the railing in the unit price bid "Pedestrian Fence".

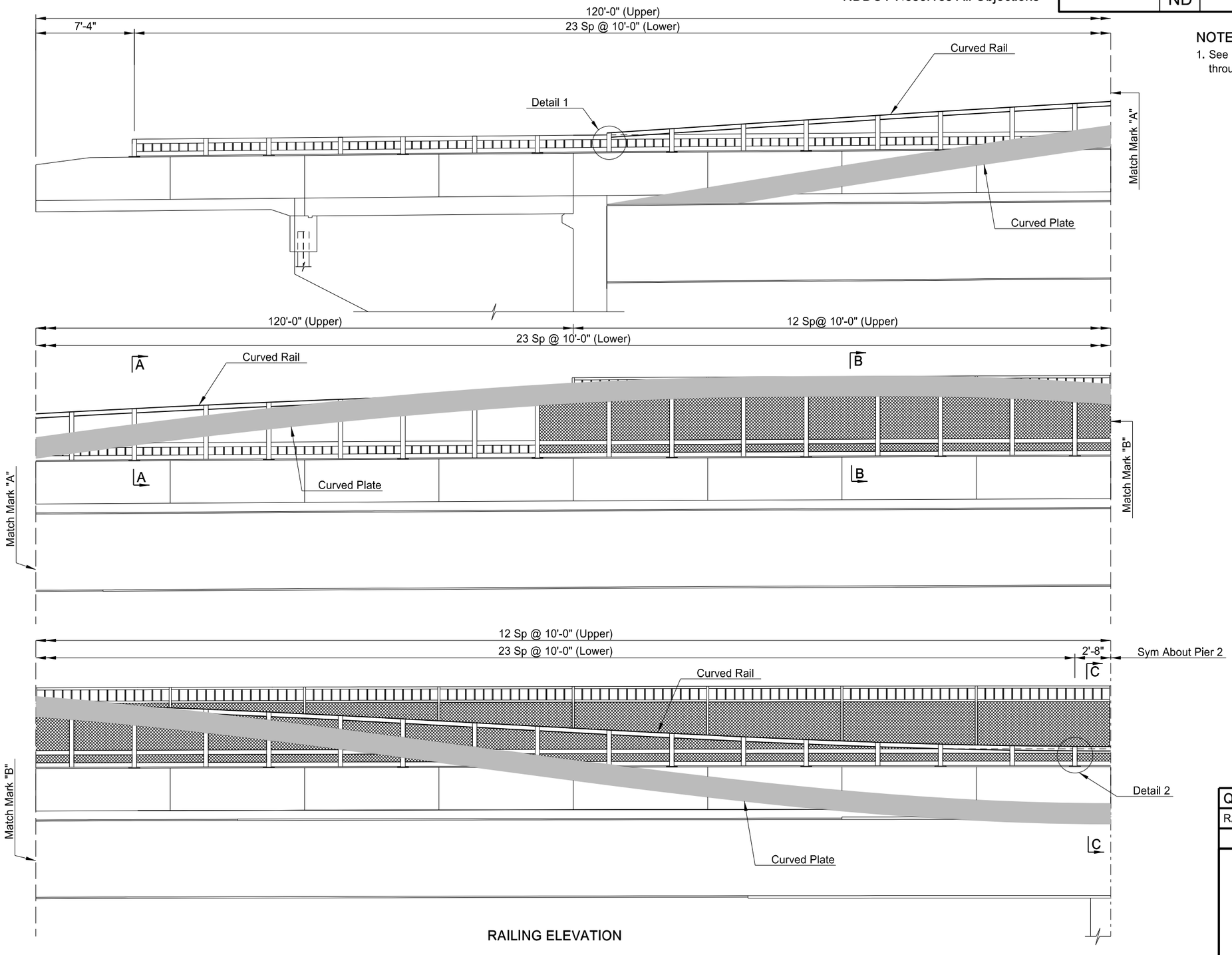
QUANTITIES
SEE DWG 29-059.264-27

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

PEDESTRIAN FENCE LAYOUT

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-974(153)156	170	29



RAILING ELEVATION

NOTES:

1. See Dwg. 29-059.264-30 for Cross Sections A-A through C-C and Details 1 and 2.

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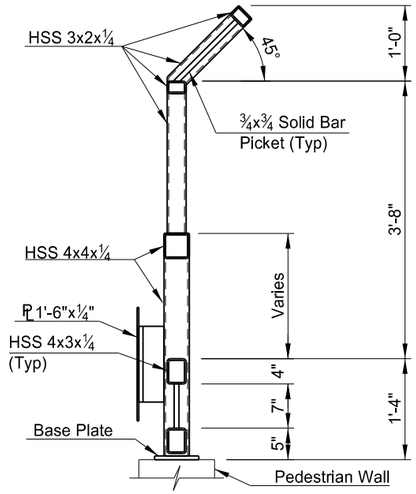
QUANTITIES	
RAILING	465.3 LF

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

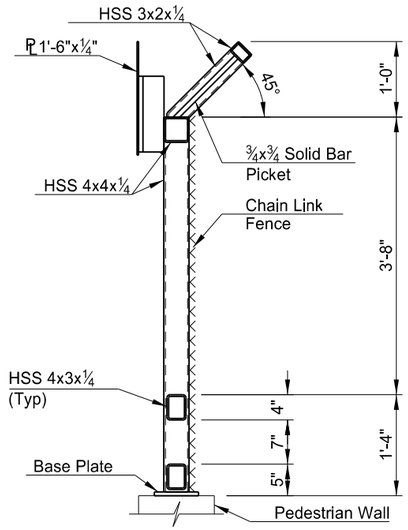
RAILING LAYOUT
OPTION 1

23 U.S.C. 409
NDDOT Reserves All Objections

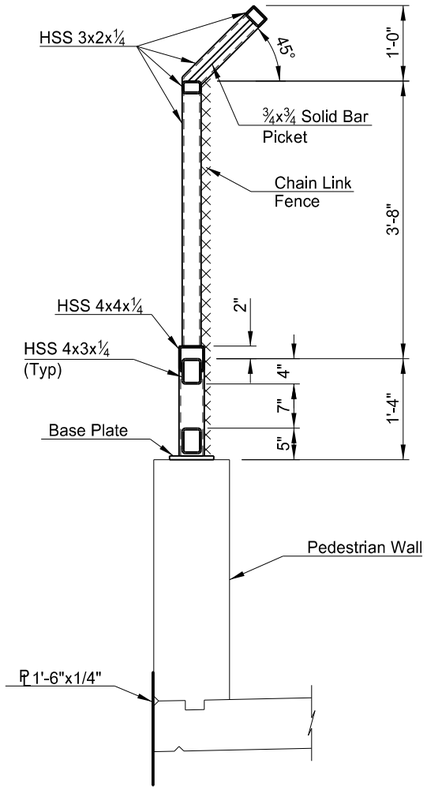
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-974(153)156	170	30



A-A



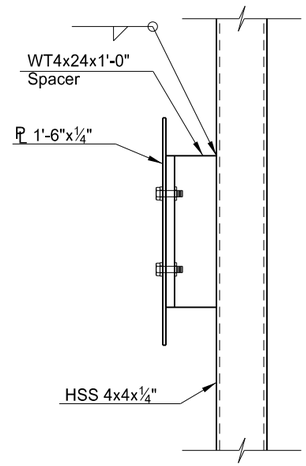
B-B



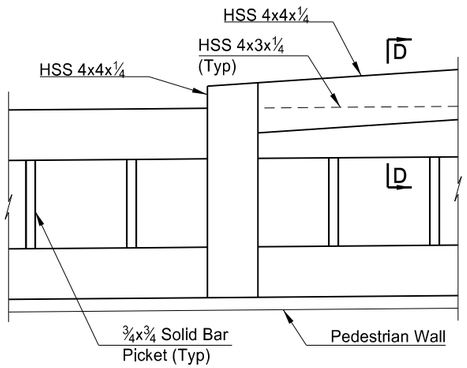
C-C

NOTES:

1. See Dwg. 29-059.264-29 for the locations of Cross Sections A-A through C-C and Details 1 and 2.
2. Attach the curved plate to every post with a minimum of four bolts. Connection design to be designed by Railing Fabricator. Use lock washers on all bolts.
3. Drill and epoxy the curved plate into the pedestrian wall near the abutments and pier at locations specified by Railing Fabricator. Include the epoxy and all connections in the work drawings for the Railing.

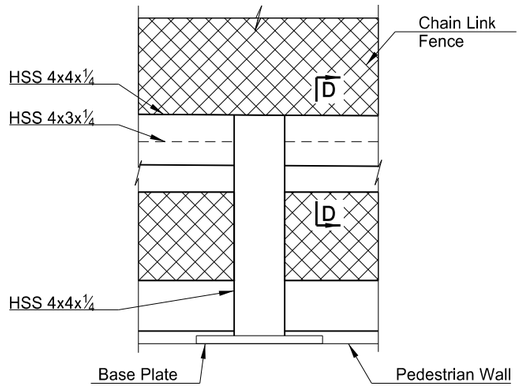


CURVED PLATE CONNECTION DETAIL



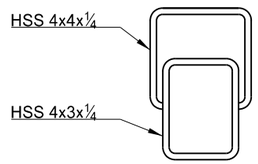
(Start of Curve)

DETAIL 1



(At Pier 2)

DETAIL 2



D-D

QUANTITIES
SEE DWG 29-059.264-29

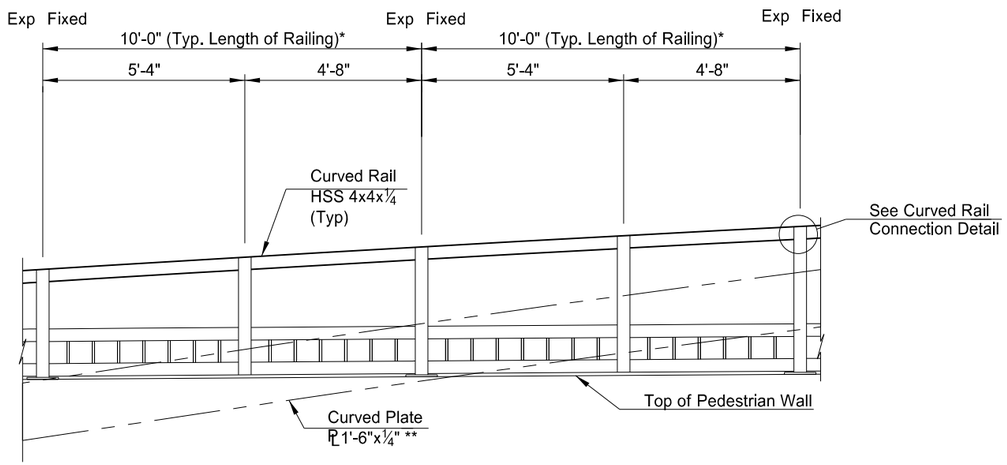
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

RAILING TYPICAL SECTIONS
OPTION 1

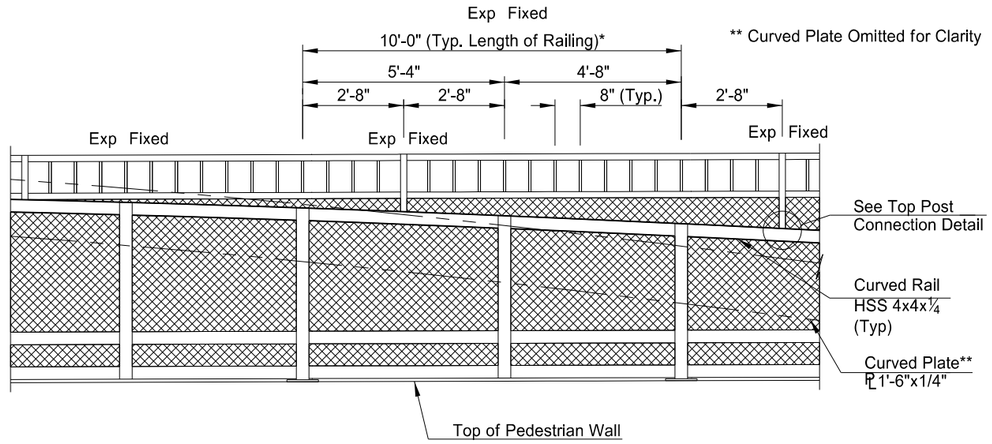
23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-974(153)156	170	31

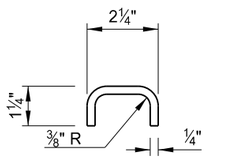
* A Single 5'-4" Post Space is Located at Pier 2



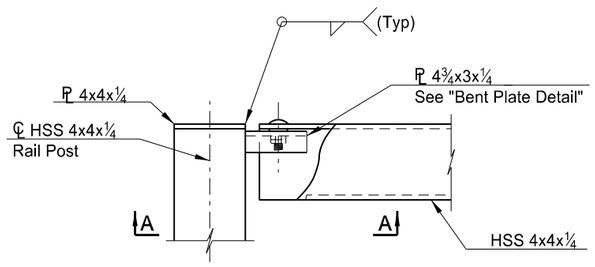
(Near Bridge Ends)
OUTSIDE ELEVATION OF PEDESTRIAN FENCE



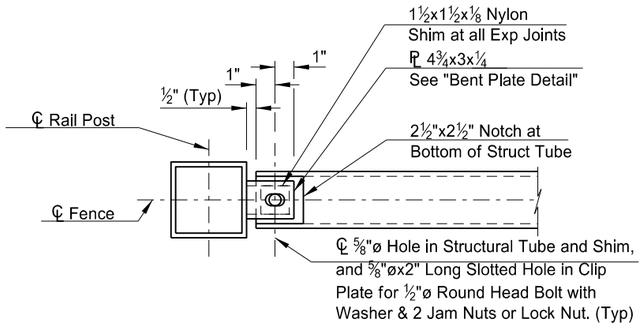
(Near Midspan)
OUTSIDE ELEVATION OF PEDESTRIAN FENCE



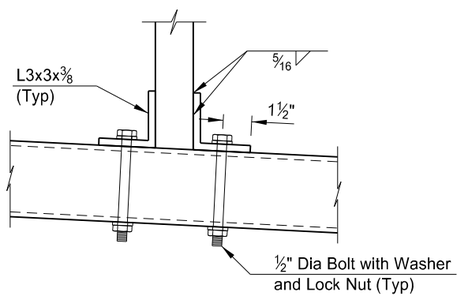
BENT PLATE DETAIL



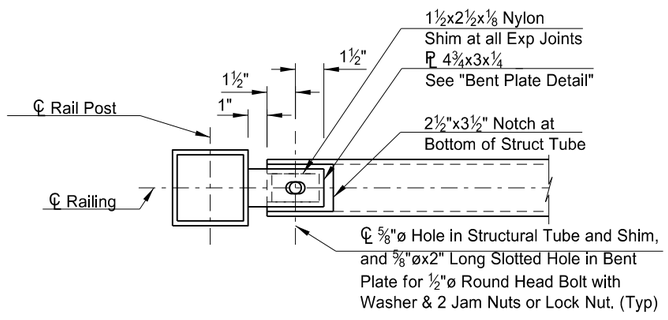
CURVED RAIL CONNECTION DETAIL



A-A



TOP POST CONNECTION DETAIL



A-A @ EXPANSION JOINT

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NOTES:

1. Provide rail plates that meet ASTM A 36. Provide posts and rails that meet ASTM A500 Grade B. Galvanize all steel elements after fabrication according to Section 854 of the Standard Specifications and then paint according to Special Provisions 70(20). Use brown finish coat, color number 10076(AMS) Standard 595A.

2. Included all pieces required for the fabrication or connection of the railing in the unit price bid "Railing".

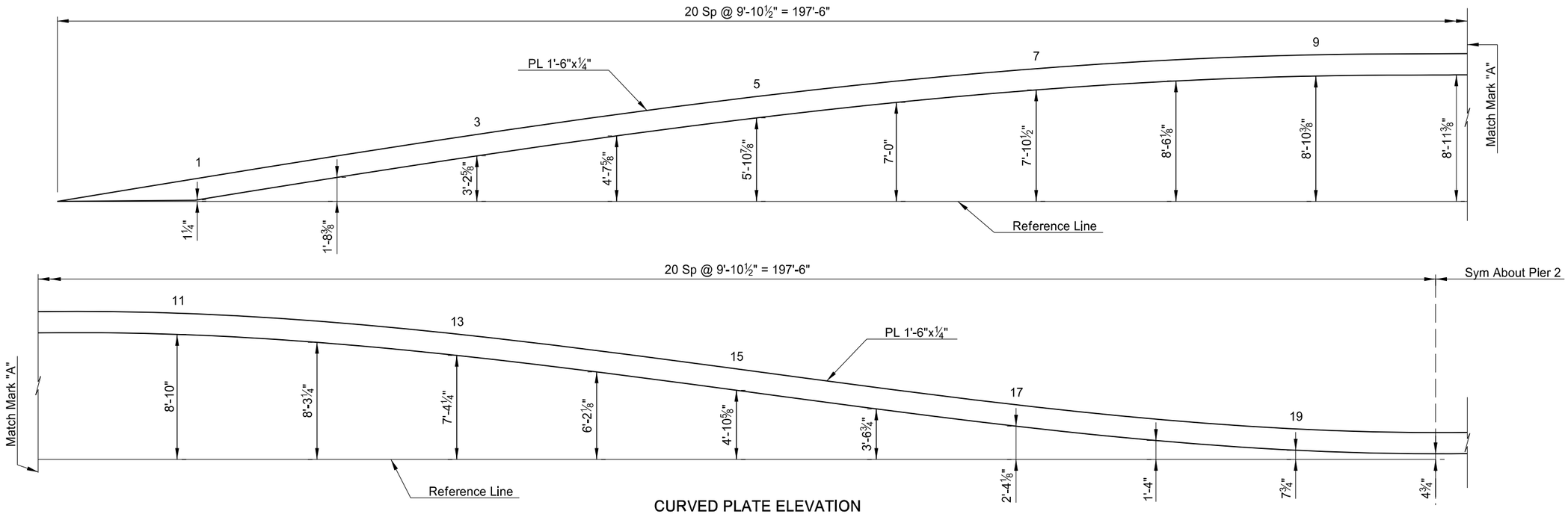
QUANTITIES
SEE DWG 29-059.264-29

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

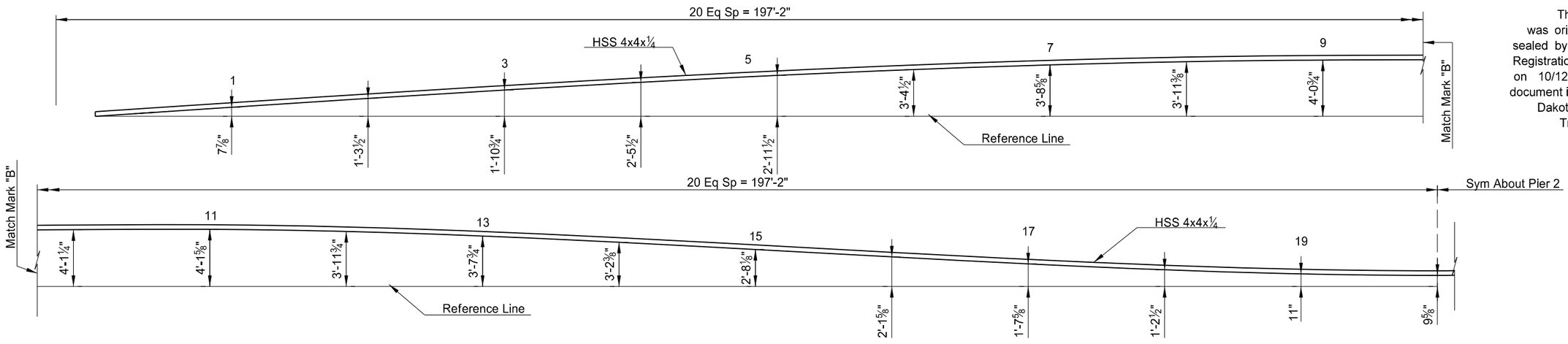
RAILING ELEVATION & DETAILS
OPTION 1

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-974(153)156	170	32



CURVED PLATE ELEVATION



CURVED RAIL ELEVATION

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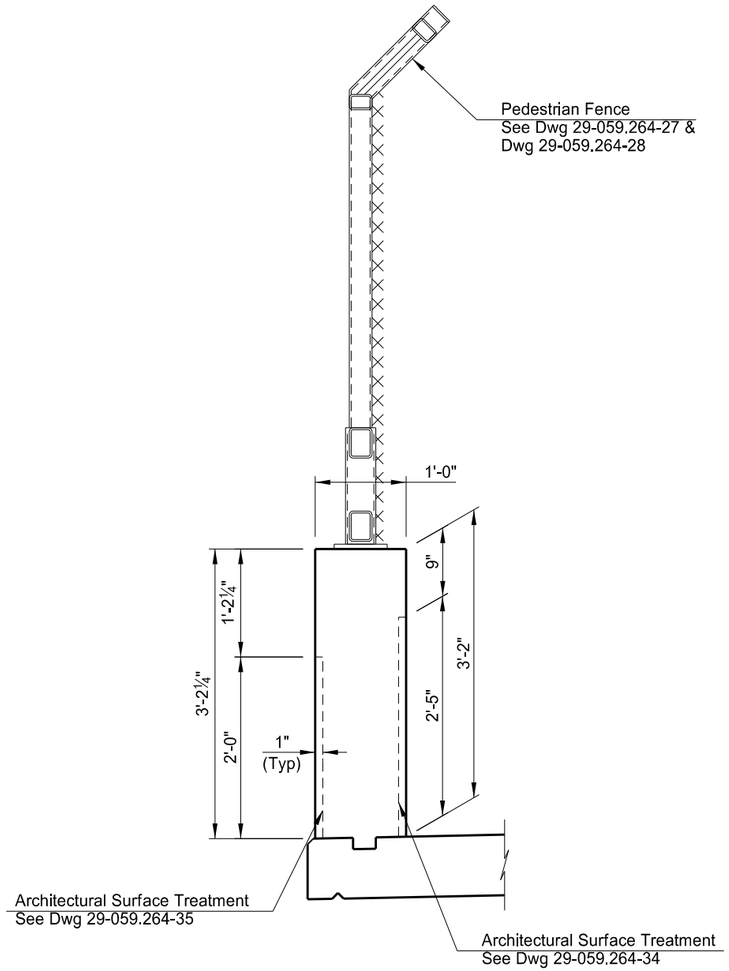
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

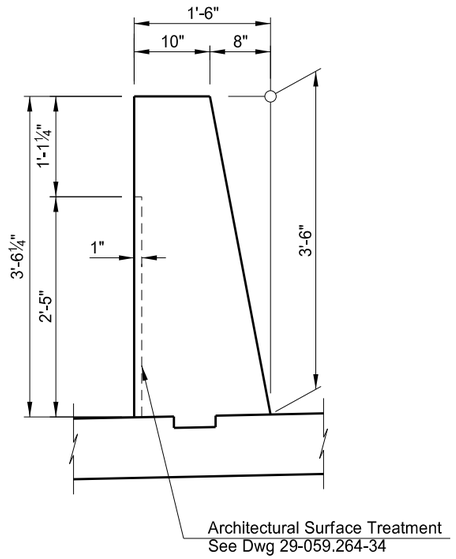
CURVED PLATE & RAIL HAUNCH DETAILS
OPTION 1

23 U.S.C. 409
NDDOT Reserves All Objections

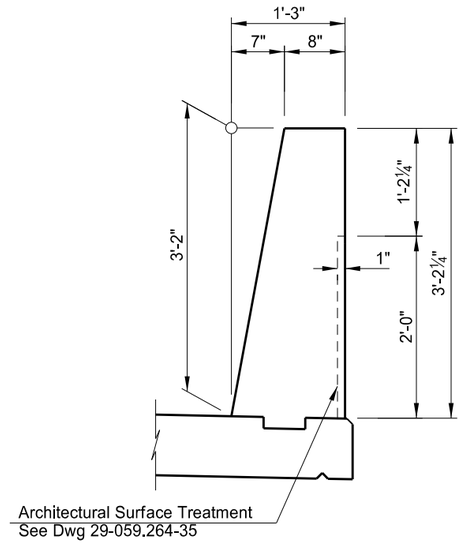
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	33



PEDESTRIAN WALL DETAIL



INTERIOR BARRIER DETAIL



EDGE BARRIER DETAIL

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64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

ARCHITECTURAL SURFACE FINISH LIMITS
OPTION 2

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	34

Group A

GRATITUDE

TAKKNEMLIGHET

WETAXKOOSSTEERAT

DANKBARKEIT

GRATITUD

SHUKRANI

MAHAD NAQ

Group B

EMBRACE

GIKINJIGWEN

ZAGRLITI

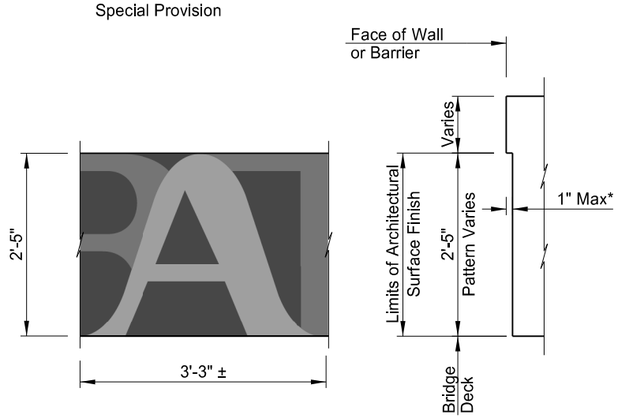
ANGALO

EMBRASSE

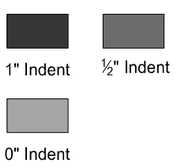
YONGBAO

GULAY MILNA

* Inset Varies. See Architectural Surface Finish Special Provision



TYPICAL FORMLINER DIMENSIONS



DEPTH KEY

NOTES:

1. See Architectural Surface Finish Special Provision 71(20) for details.

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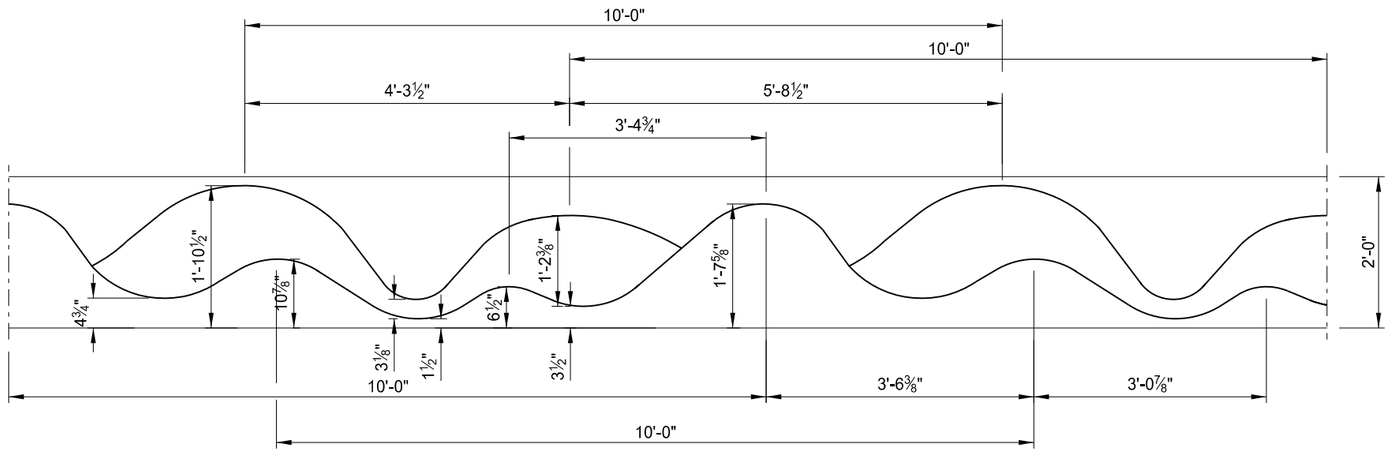
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

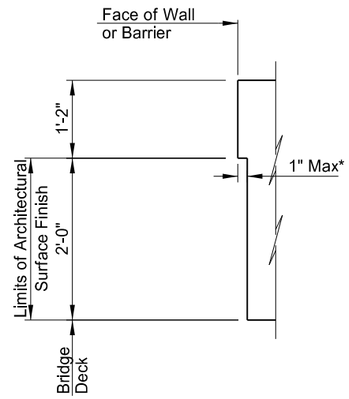
ARCHITECTURAL SURFACE FINISH DETAILS
OPTION 2

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	170	35

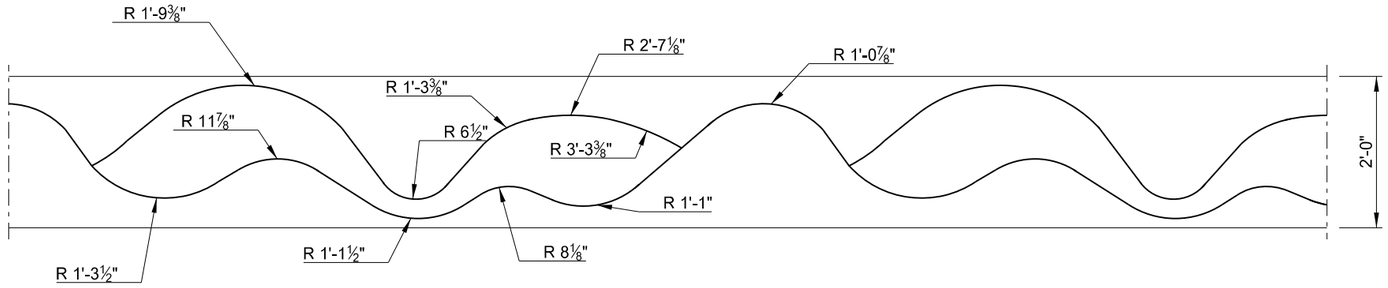


CUSTOM FORMLINER DIMENSIONS



TYPICAL FORMLINER DIMENSIONS

* Inset Varies. See Architectural Surface Finish Special Provision



CUSTOM FORMLINER DIMENSIONS

TYPICAL FORMLINER

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1" Indent
0" Indent
½" Indent

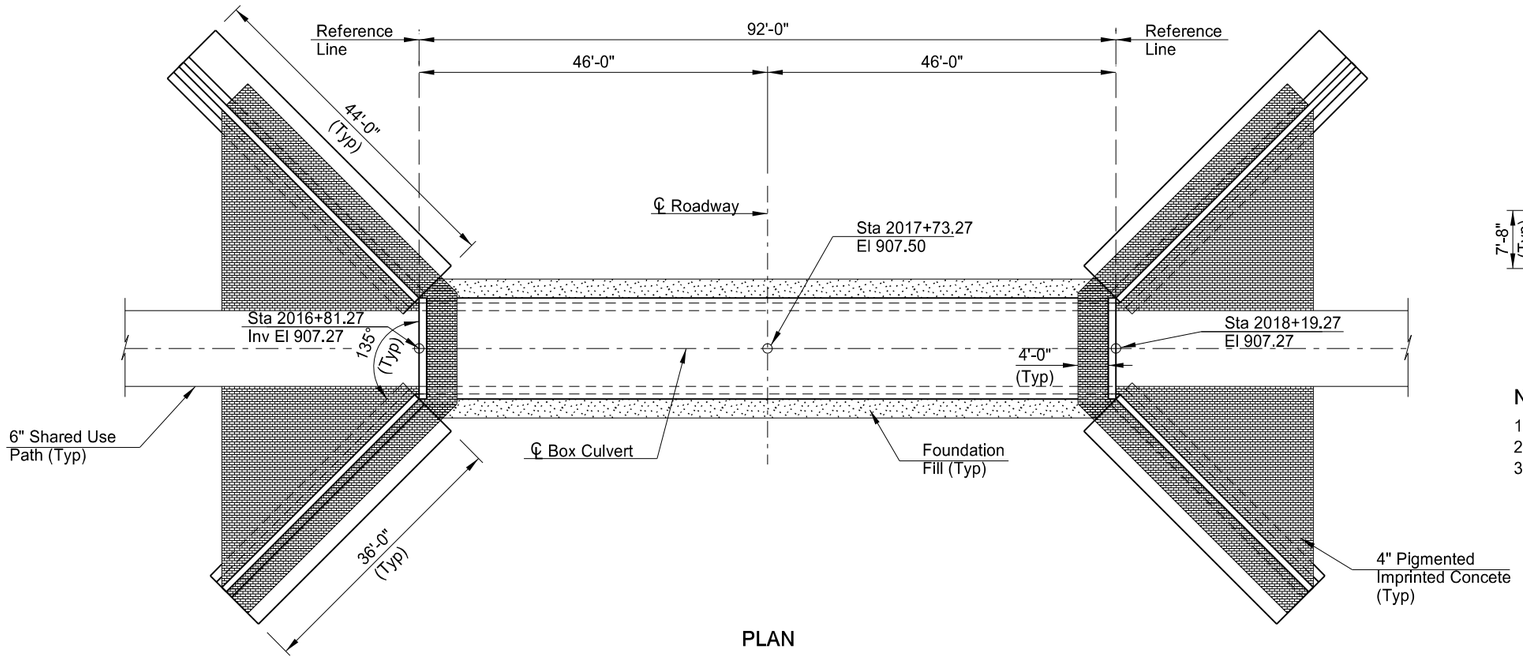
DEPTH KEY

NOTES:
1. See Architectural Surface Finish Special Provision 71(20) for details.

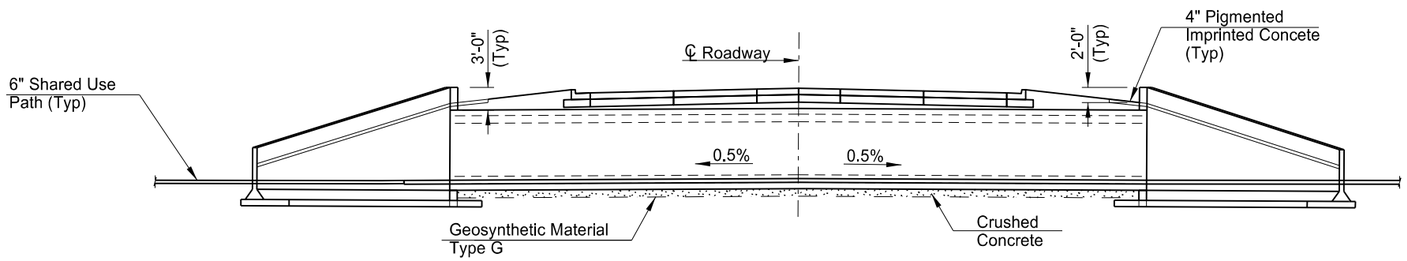
64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

ARCHITECTURAL SURFACE FINISH DETAILS
OPTION 2

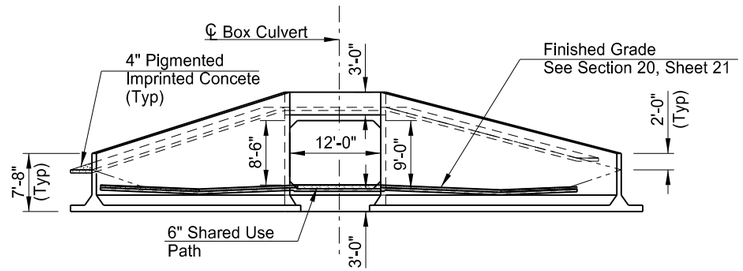
	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	171	1



PLAN



ELEVATION



END VIEW

NOTES:

1. Install ceiling lights inside box culvert per Section 140.
2. Invert elevations listed are for the box culvert. The paved surface will be 6" higher.
3. Sawcut contraction joints in new 6" concrete at each box culvert section joint, and one longitudinal at centerline. The joint at the ends of the box culvert will be a ¾" expansion joint. Place an expansion joint between the Impressioned 5" Thick Reinforced Concrete and the wing walls. Construct the expansion joints per Section 826.

BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0210	FOUNDATION FILL	CY	2028
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
302	0101	SALVAGED BASE COURSE	CY	62
606	1209	12FT X 9FT RCB CULVERT	LF	92
606	5209	12FT X 9FT RCB END SECTION	EA	2
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	187

For a single barrel box culvert with 9" thick roof, 10" floor and 8" walls, the following total factored moments and shears would result from the application of the required loads:

FACTORED DESIGN MOMENTS		FACTORED DESIGN SHEARS	
WALL MOMENT	813 ft-lbs	WALL SHEAR	2,065 lbs
ROOF MOMENTS		ROOF SHEARS	
CORNER	12,036 ft-lbs	CORNER	5,909 lbs
BOTTOM	26,352 ft-lbs	FLOOR SHEARS	
FLOOR MOMENTS		CORNER	7,950 lbs
CORNER	8,778 ft-lbs		
TOP	19,711 ft-lbs		

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STANDARD DRAWINGS

D-714-22

HL-93 DESIGN LOADING

CITY OF FARGO
FARGO, NORTH DAKOTA

64TH AVE SOUTH
WEST PEDESTRIAN UNDERPASS
PRECAST CONCRETE
BOX CULVERT LAYOUT

CLEAR SPAN 1 x 12' CLEAR HEIGHT 9'
MAXIMUM FILL 3'

PROJECT: SU-8-984(153)156
℄ STATION 2017+73.27
CASS COUNTY

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	171	2

PRECAST BOX CULVERT
STRUCTURAL NOTES

100 SCOPE OF WORK: Work at this site consists of building a new single barrel 12' x 9' x 92'-0" precast concrete box culvert for a pedestrian path underpass.

105 WORK DRAWINGS: Submit 12FT X 9FT RCB Culvert work drawings to the Engineer for review. Use the following minimum text sizes on all work drawing sheets.

Dimensions and Notes =	0.08"
Detail Subtitles =	0.09"
Detail Titles =	0.10"

210 FOUNDATION FILL: Use CL 3 as specified in Section 816, "Aggregates". Place embankment in lifts not to exceed 12 inches of loose material. Manipulate substandard areas by working the soil until the specified density and uniform moisture content are achieved. Compact aggregate to at least 98% of the maximum dry density with a moisture content no less than 1.0 percentage points below the optimum moisture and no more than 3.0 percentage points above the optimum moisture content. Include all CL 3 material required to install the new box culvert in the price bid for "FOUNDATION FILL".

302 AGGREGATE BASE AND SURFACE COURSE: Use Crushed Concrete Base material meeting Section 817, "Salvaged Base Course" under the box culvert as shown on Sheets 3. Include all Crushed Concrete Base material required to install the new box culvert in the price bid for "SALVAGED BASE COURSE".

606 PAINTED SURFACE FINISH: Remove all fins and irregular projections and fill with mortar all surface cavities and honeycombed areas on exposed surfaces with a diameter of $\frac{3}{8}$" or larger. Exposed surfaces are defined as all surfaces exposed to view of the completed structure inside and outside above the finish ground line, including wing walls. Use mortar to fill surface cavities consisting of three parts mortar sand, one part standard Portland Cement and water. Use enough water to produce a mortar consistency as dry as possible to use effectively. Produce final exposed surfaces that are smooth and free of imperfections.

Sand or water blast all exposed surfaces before applying surface paint to break the surface film and to remove the laitance, form release agent, dirt and other foreign matter that might adversely affect adhesion of the paint.

Use surface paint consisting of a commercial grade 100% exterior masonry acrylic latex paint. Provide grey flat paint, color number 36622, that meets AMS Standard 595A. Apply two coats of the paint to the exposed surfaces by spraying as recommended by the manufacturer. Produce a finished surface that is uniform in color and texture after drying, without evidence of laps or breaks in continuity or runs. Perform corrective work on unsatisfactorily finished areas of topcoat as directed by the Engineer and at the Contractor's expense. Include all required surface finish work and paint coating in the price bid for "12FT X 9FT RCB CULVERT".

606 PRECAST REINFORCED CONCRETE BOX CULVERT AND END SECTIONS: Tie the barrel sections together with 1" hidden tie bolts as shown on Standard Drawing D-714-22. Use two ties per exterior wall at each joint located at third points of the wall clear height.

All bolts, plates, angles, and studs are to meet ASTM A36. Nuts are to be a heavy hex in conformance with ASTM A563 and washers shall be ASTM F436, Type 1. Welded pipe sleeves are to conform to ASTM A53, Grade B. Welders are required to be properly certified for all shop and field welds. Coat all field welds with galvanizing paint. Galvanize all hardware according to AASHTO M 232. Galvanize structural steel after fabrication according to AASHTO M 111.

606 CONSTRUCTION REQUIREMENTS: Wrap the exterior of each joint with a waterproof adhesive seal that meets the requirements of the ASTM C877, Type III specification. Use a joint seal that is a minimum of 12 inches wide.

DESIGN LOADS:

A. HL-93 Loading
B. Maximum Fill Height = 3'-0"

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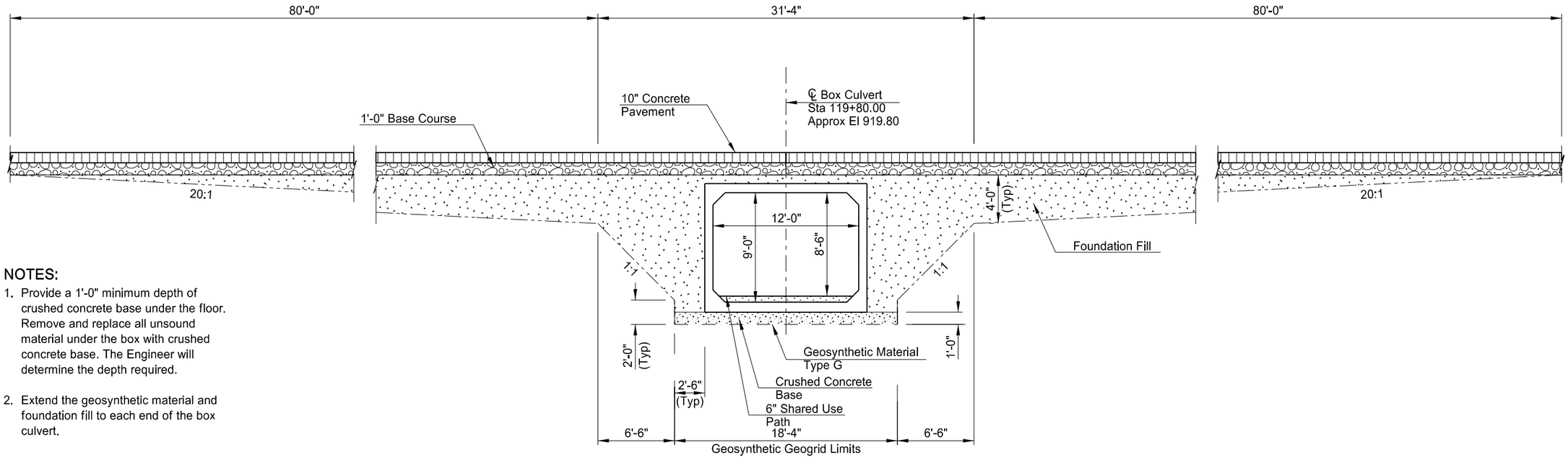
64TH AVE SOUTH
WEST PEDESTRIAN UNDERPASS

STRUCTURAL NOTES

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	171	3



(SHOWING SECTION ALONG ℄ ROADWAY)

BACKFILL DETAIL

NOTES:

1. Provide a 1'-0" minimum depth of crushed concrete base under the floor. Remove and replace all unsound material under the box with crushed concrete base. The Engineer will determine the depth required.

2. Extend the geosynthetic material and foundation fill to each end of the box culvert.

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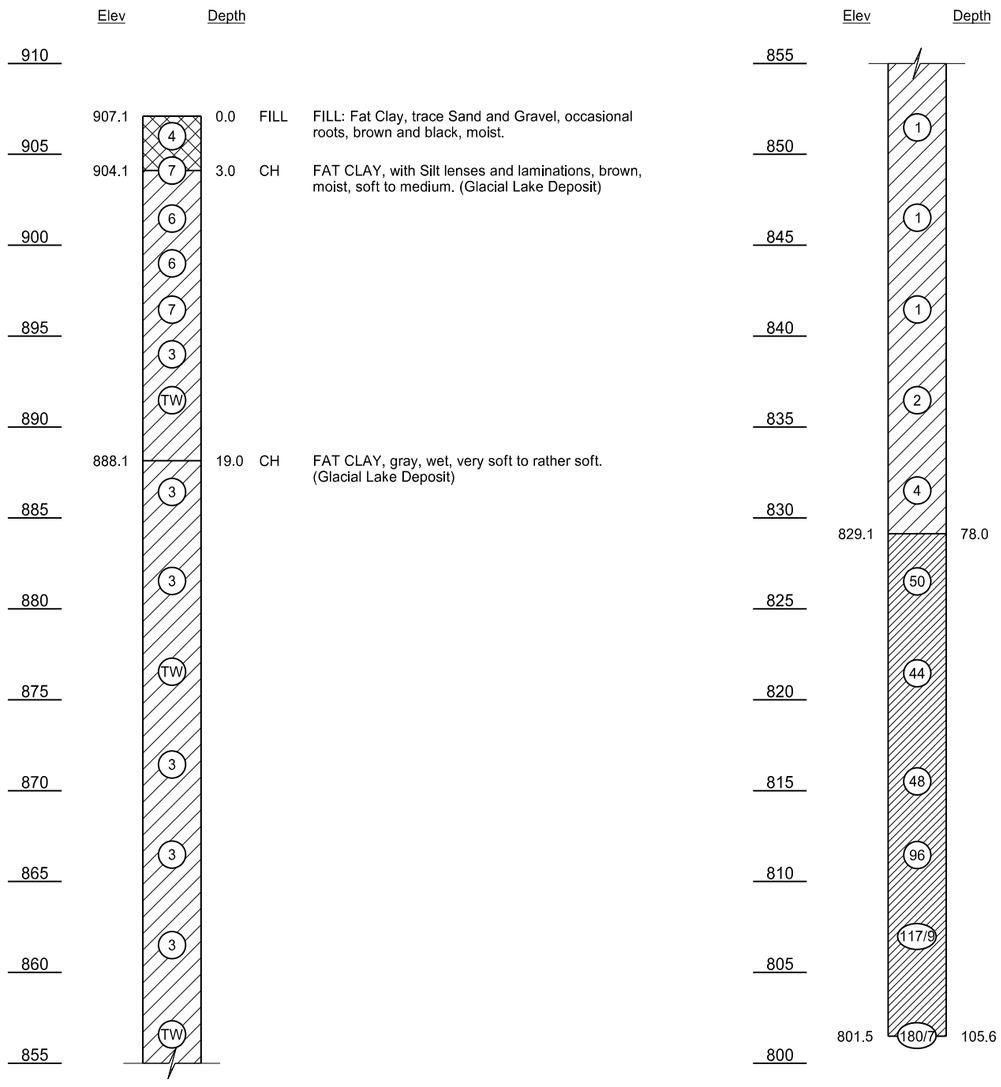
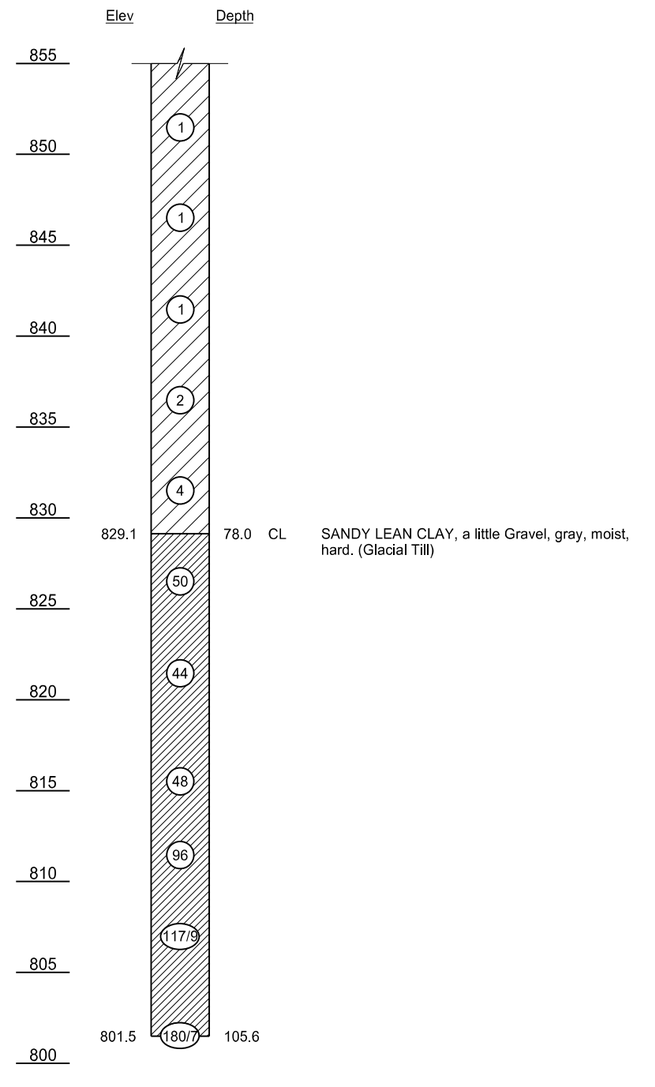
64TH AVE SOUTH
WEST PEDESTRIAN UNDERPASS

EXCAVATION & FOUNDATION FILL DETAIL

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	175	1





ST-04
Sta 127+20.00
12.00' Lt
Drilled on: September 9, 2016

NOTES:

1. The encircled numbers indicate the number of blows delivered by a 140 lb. automatic hammer from a height of 30" to drive a 2" o.d. split-barrel sampler 1'-0".

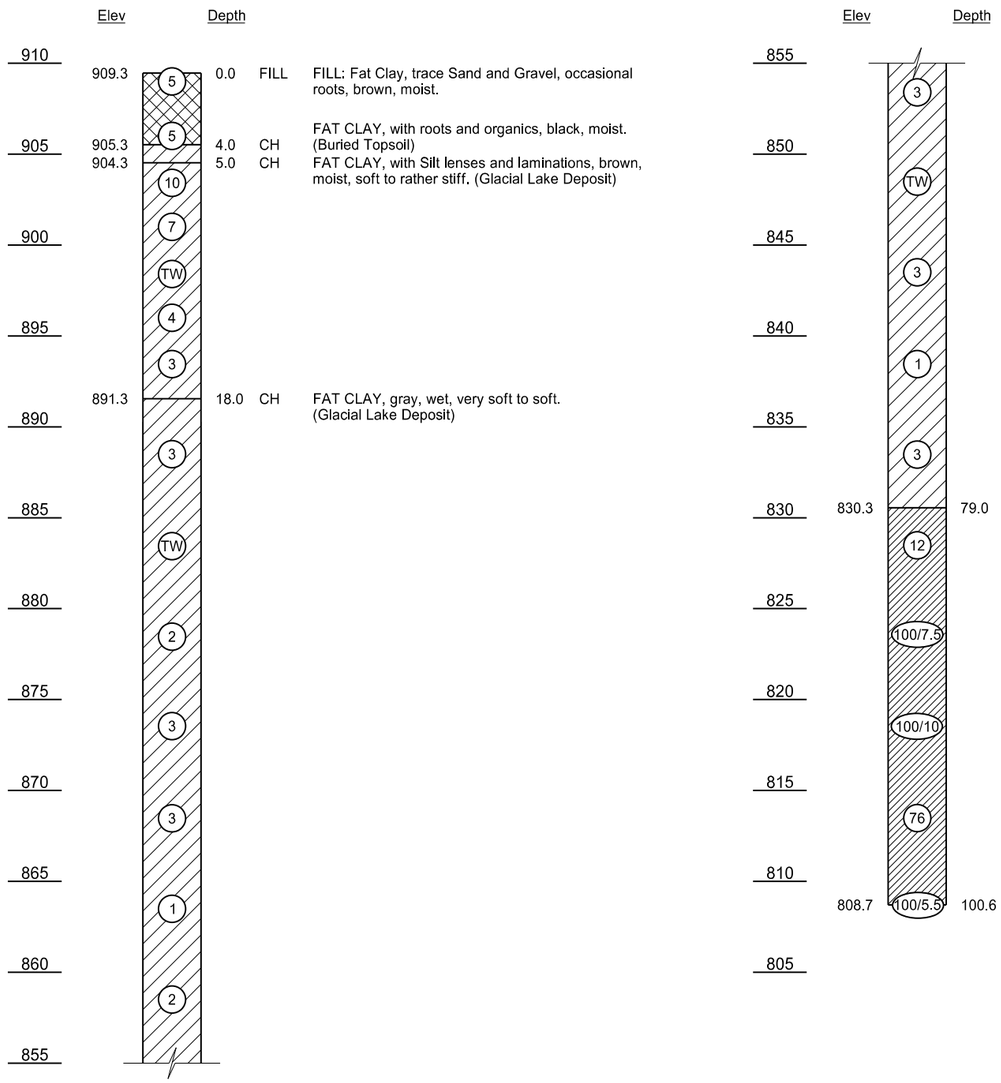
2. The boring data shown is for owner's design and estimating purposes only. The boring logs are only representative of the exact location from which the samples were taken and interpretation between sample locations is discouraged. The owner assumes no responsibility if the soil conditions encountered during construction differ from those shown.

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

BORING LOG

23 U.S.C. 409
NDDOT Reserves All Objections

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	175	2



FILL: Fat Clay, trace Sand and Gravel, occasional roots, brown, moist.

FAT CLAY, with roots and organics, black, moist. (Buried Topsoil)

FAT CLAY, with Silt lenses and laminations, brown, moist, soft to rather stiff. (Glacial Lake Deposit)

FAT CLAY, gray, wet, very soft to soft. (Glacial Lake Deposit)

SANDY LEAN CLAY, a little Gravel, gray, moist, rather stiff to hard. (Glacial Till)

ST-05
Sta 130+45.00
12.00' Lt
Drilled on: September 6, 2016

NOTES:

1. The encircled numbers indicate the number of blows delivered by a 140 lb. automatic hammer from a height of 30" to drive a 2" o.d. split-barrel sampler 1'-0".
2. The boring data shown is for owner's design and estimating purposes only. The boring logs are only representative of the exact location from which the samples were taken and interpretation between sample locations is discouraged. The owner assumes no responsibility if the soil conditions encountered during construction differ from those shown.

64TH AVE SOUTH OVERPASS
CITY OF FARGO, NORTH DAKOTA

BORING LOG