DESIGN DATA				
Traffic	Average Daily			
Current 2015	Pass: 28,001	Trucks: 1,319	29,320	
Forecast 2040	Pass: 40,559	Trucks: 1,911	Total: 42,470	
Clear Zone Distance: 14 feet		Design Speed: 40 mph (West of 36th St) 35 mph (East of 36th St)		
Minimum Sight Dist. for Stopping: 305' (40 mph) 250' (35 mph)		Bridges: HS 20 (Bridge), HL 93 (Ped Box)		
Limited Access Control				
Pavement Design Life 30 (years)				
Design Accumulated One-way Rigid ESALs: 16,027,900				

JOB # 19
CITY OF FARGO
AND
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	21261	1	1
		IM-8-029(166)062	21262		

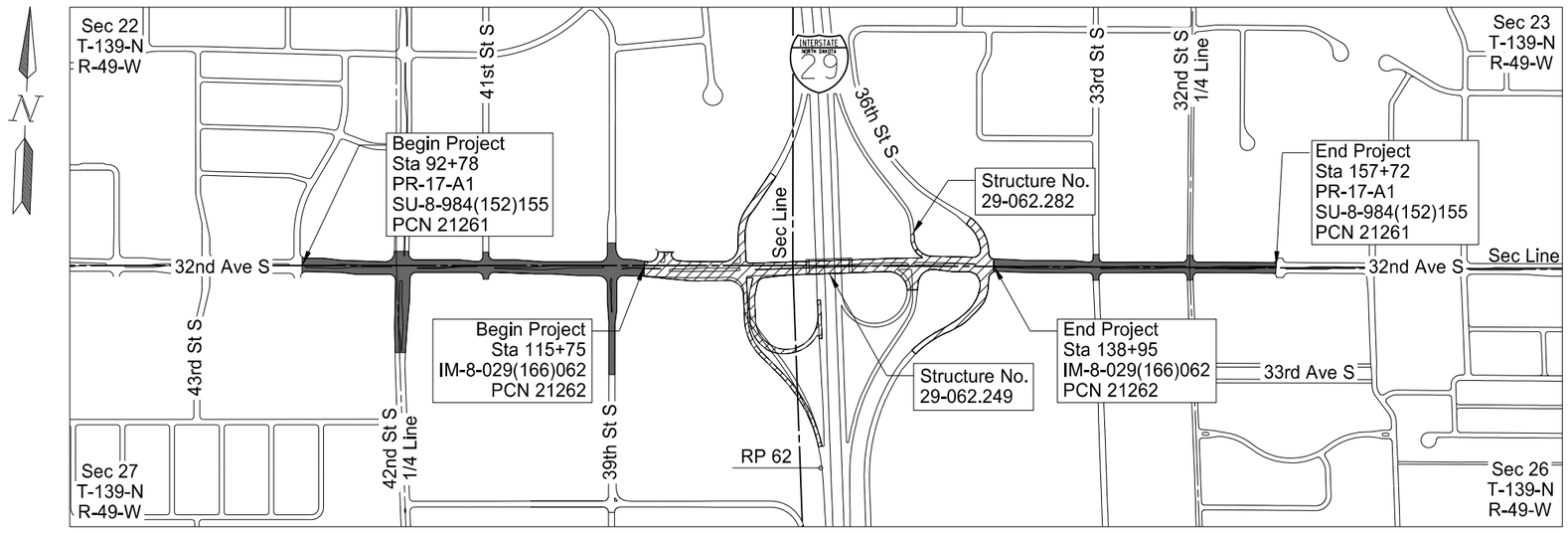
City of Fargo No. PR-17-A1
SU-8-984(152)155
IM-8-029(166)062
32nd Avenue South - 42nd Street to 32nd Street
Interstate 29 and 32nd Avenue South Interchange Improvements

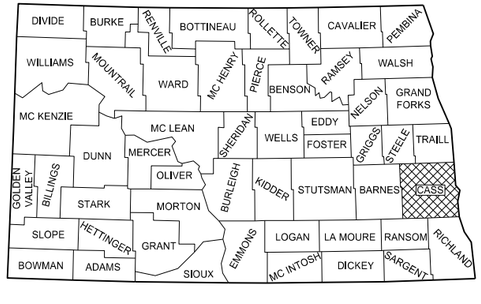
FHWA Limited Involvement
Cass County

Grading, Salvaged Base, PC Concrete Pavement, Bridge Widening, Ramp Construction, Retaining Wall,
Storm Sewer, City Utilities, Box Culvert, Curb & Gutter, Sidewalk, Signing, Marking, Traffic Signals, Street Lighting & Incidentals

GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SU-8-984(152)155	0.77 Miles	0.77 Miles
IM-8-029(166)062	0.44 Miles	0.44 Miles





STATE COUNTY MAP

APPROVED DATE 11/15/16

April E. Walker /s/
CITY ENGINEER
CITY OF FARGO

DISTRICT REVIEW

Kevin Gorder /s/
Fargo District

APPROVED DATE 11/28/16

Robert Fode /s/
OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

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

APPROVED DATE 11/14/16

Matthew T. Kinsella /s/
Apex Engineering Group

This document was originally issued and sealed by Matthew T. Kinsella, Registration Number PE- 5692 , on 11/14/16 and the original document is stored at the North Dakota Department of Transportation

DESIGNERS

David Wood	Jeffrey Rensch
Mike Johnson	Tony Lapp
Tyler Swoboda	James Mickelson
Sarah Mohl	Joshua Loegering
Tom Conlin	Stephen Joersz

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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	SU-8-984(152)155		

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		SU-8-984(152)155		

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IM-8-029(166)062

SU-8-984(152)155 Improvements

IM-8-029(166)062 Improvements

N

41st St S

INTERSTATE NORTH DAKOTA 29

36th St S

33rd St S

Sec 22
T-139-N
R-49-W

Sec 23
T-139-N
R-49-W

Sienna Dr S

Begin Project
Sta 92+78
PR-17-A1
SU-8-984(152)155
PCN 21261

IM-8-029(166)062

SU-8-984(152)155

IM-8-029(166)062

SU-8-984(152)155

Sec Line

Structure No.
29-062.282

End Project
Sta 157+72
PR-17-A1
SU-8-984(152)155
PCN 21261

32nd Ave S

Sec Line

32nd Ave S

33rd Ave S

Begin Project
Sta 115+75
IM-8-029(166)062
PCN 21262

Structure No.
29-062.249

End Project
Sta 138+95
IM-8-029(166)062
PCN 21262

42nd St S
1/4 Line

39th St S

Sec 27
T-139-N
R-49-W

Sec 26
T-139-N
R-49-W

32nd St S
1/4 Line

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Scope of Work

42nd Street to 32nd Street
and I-29 Interchange Improvements

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	4	2

N

Sienna Dr S

95+00

1/4 Line 42nd St S

100+00

105+00

41st St S

110+00

115+00

39th St S

32nd Ave S

DO IT BEST LAMPERTS

Concrete Shared-Use Path

AEROTEK

THOMSEN HOMES BOLTON & MENK, INC.

THERMO KING OF FARGO

Sec 22
T-139-N
R-49-W

Begin Project
Sta 115+75
IM-8-029(166)062
PCN 21262

Begin Project
Sta 92+78
PR-17-A1
SU-8-984(152)155
PCN 21261

Concrete Sidewalk

IM-8-029(166)062
Project

SU-8-984(152)155
Project

See
Section 4 Sheet 3
for IM-8-029(166)062
Scope of Work

CONSOLIDATED COMMUNICATIONS

CASS COUNTY ELECTRIC

FARGO TIRE SERVICE

LOVE'S TRAVEL STOP

CONSOLIDATED COMMUNICATIONS

Sec 27
T-139-N
R-49-W

HERE WE GO CHILDCARE

135+00

140+00

Sec 23
T-139-N
R-49-W

145+00

33rd St S

150+00

32nd St S
1/4 Line

155+00

160+00

FARGO TRACTOR

SANFORD HEALTHCARE ACCESSORIES

BANK OF THE WEST

ALERUS FINANCIAL

32ND CENTER

FARGO PUBLIC LIBRARY CARLSON

IM-8-029(166)062
Project

See
Section 4 Sheet 3
for IM-8-029(166)062
Scope of Work

SU-8-984(152)155
Project

LIFT STATION (2)

Concrete Shared-Use Path

Line Sanitary Sewer

32nd Ave S

Sec Line

Concrete Sidewalk

End Project
Sta 138+95
IM-8-029(166)062
PCN 21262

SAINT SOPHIE'S

SOUTHPOINTE TESORO

WATER TOWER

FARGO RENTALL INC

LUTHER COLLISION & GLASS

Sec 26
T-139-N
R-49-W

AC DELCO SOUTHPOINT SERVICE CENTER

LUTHER FAMILY BUICK GMC

ESSENTIA HEALTH

Legend

Concrete Widening

Concrete Full Depth Reconstruction

End Project
Sta 157+72
PR-17-A1
SU-8-984(152)155
PCN 21261

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Scope of Work

42nd Street to I-29 Interchange
I-29 Interchange to 32nd Street S

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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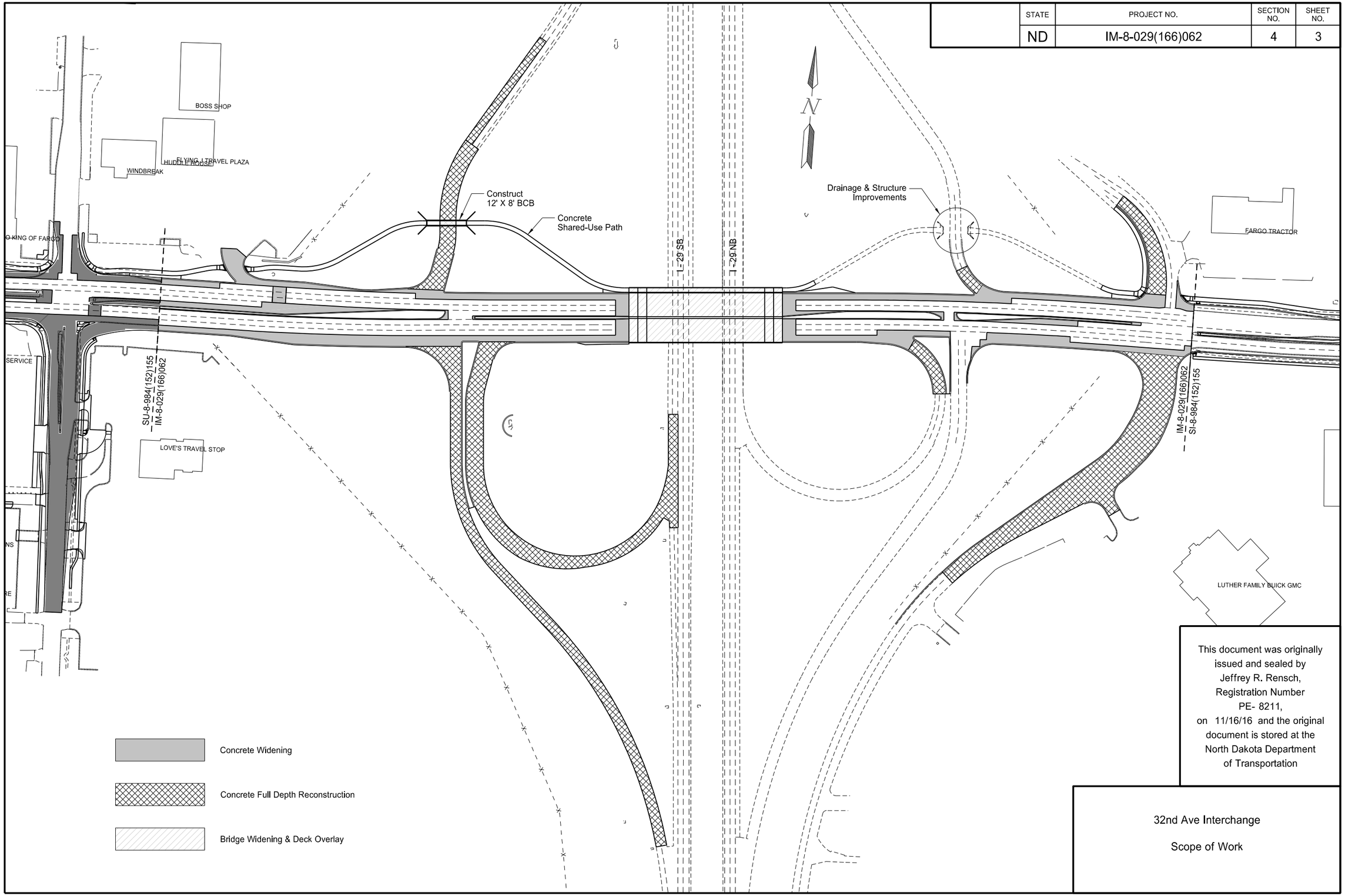

This document was originally issued and sealed by Jeffrey R. Rensch, Registration Number PE- 8211, on 11/16/16 and the original document is stored at the North Dakota Department of Transportation

32nd Ave Interchange

Scope of Work

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155 IM-8-029(166)062	6	1

NOTES

100-P01 COORDINATION OF PROJECTS: The following projects are planned to occur in the vicinity of this project during the 2017 construction season:

- NDDOT Project IM-NHU-9-999(369), PCN 21572, Bid Date 02/03/17 – This is a statewide project that will provide maintenance for existing high mast lighting. The luminaires will be replaced on the high mast light standards at the 32nd Ave S interchange. Coordinate with this project to ensure that electrical work and traffic control are accommodated.
- City of Fargo Project PR-17-G1 – Seal coating 32nd St, 33rd St, and 35th Ave S
- Xcel Energy – burying the overhead power lines on the north side of 32nd Ave S from 36th St to east of 32nd St. Anticipated completion date for Xcel's project is July 15, 2017.

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

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

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

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

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

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

107-P01 SHARED USE PATH: Maintain access on the shared use path within the 32nd Avenue Interchange during Phases 1 & 2 as shown in Sec 100 Work Zone Traffic Control plan sheets.

107-P02 MAINTAINING TRAFFIC – EDGE DROP-OFFS: Leave the work area free any type of obstruction, drop-offs greater than 2-inches or embankment areas steeper than 4:1 adjacent to traffic lanes during non-working hours. Fill with a temporary 4:1 wedge at any drop-off greater than 2-inches.

The Engineer will not measure material used to construct the wedge. Include cost for the additional aggregate or embankment required for this operation in the price bid for aggregate or earthwork pay items.

Minimize the time of the pavement drop-off by coordinating the surfacing removal with the aggregate and paving operations.

108-P01 WEEKLY PLANNING & REPORTING MEETING: A weekly planning and reporting meeting is required. Provide a suitable meeting facility. Have the room approved by the Engineer.

Organize a biweekly meeting with business owners and residents along the 32nd Avenue South project corridor, including side streets. The meeting shall follow the same requirements of the weekly planning meeting.

108-P02 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 a "Weekly Planning and Reporting Meeting".
2. Provide information for news releases on construction activities to the Engineer, Fargo District, and to the City of Fargo prior to 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 information for news releases regarding construction activities every other week, at a minimum.
3. Be available for media interviews.
4. 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.

155-P01 CONCRETE EQUIPMENT: Provide a NRMCA Certified plant for concrete used in Sections 550, "Concrete Pavement", 602 "Concrete Structures", and 622 "Pilings".

201-P01 CLEARING & GRUBBING: Remove existing shrubs, bushes, wood mulch, landscaping rock, landscaping fabric and concrete edging located within the limits of construction.

East of the existing pedestrian box culvert under the NE Ramp, reshape the topsoil to re-establish positive drainage for a distance of approximately 50 LF from structure.

Include all costs for landscaping removal and minor reshaping in the price bid for "Clearing & Grubbing – Site 2".

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NOTES

202-P01 REMOVAL OF PAVEMENT: Removal of pavement consists of removing and salvaging concrete and bituminous pavements, median paving, sidewalks, curb and gutter and aggregate base. The tonnage of "Removal of Pavement" is based on the existing typical sections shown in Section 30. The tonnage includes the entire surfacing and the aggregate base, except the bottom two inches of aggregate base. The bottom two inches of aggregate base is considered unsuitable and will be paid for as "Common Excavation – Type A."

202-P02 REMOVAL OF EDGEDRAIN: Remove any edgedrain impacted by the reconstruction/widening of 32nd Avenue. Plug or cap any edgedrain that can remain in place that is not impacted as directed by the Engineer. Include all cost for removal of edgedrain in the price bid for "Removal of Pavement".

202-P03 REMOVAL OF PIPE ALL TYPES AND SIZES: Backfill cavities from removed pipes from Sta 92+78 to Sta 115+75, and from Sta 138+95 to Sta 157+72, with Aggregate Base Course Class 3 and compact to 95% of standard proctor density.

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

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

203-P01 COMPACTION AND DENSITY CONTROL: Compact material to 95% of the maximum dry density (as specified in Section 203.04E.2.b "ND T 99") with moisture content no less than the optimum moisture and no more than 7 percentage points above the optimum moisture.

Compaction of all earth material shall follow the requirements of ND T 99, but ND T 180 is required for the granular base material for the pipe backfills. The earth material to be compacted for the pipe backfill shall be in accordance with ND T 99.

203-P02 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 subgrade located under the roadway. In fill areas, perform a proof roll test per one foot of each compacted lift.

Complete proof rolling by using a fully loaded tandem dump truck. Other heavy equipment may be substituted to complete proof rolling upon prior approval of the Engineer. 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 "Common Excavation-Type A."

203-P03 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.

203-P04 BORROW CLUE: The NDDOT has identified a potential site for any embankment needed for widening/reconstruction of 32nd Avenue South.

- NDDOT Radio Tower Site at the West Fargo I-94 Interchange

There is approximately 9,500 CY of material available. Upon removal of the embankment material, grade the area for proper drainage. Any borrow material excavated shall be paid for as "Borrow-Excavation".

The existing topsoil located on this stockpile site is approximately 2" to 3". A quantity of 350 CY of topsoil has also been provided for this location. The topsoil is paid for as "Topsoil – Dept Option Borrow Area".

203-P05 BENCHING: As shown in the 32nd Avenue South typical sections, 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.

203-P06 COMMON EXCAVATION-SUBCUT: A quantity of 1,300 CY has been included to be used as directed by the Engineer.

251-P01 SEEDING & MULCHING BORROW CLUE SITE: After acquiring any needed borrow from the NDDOT Radio Tower Site at the West Fargo I-94 Interchange, seed and mulch the area. Two acres of "Temporary Cover Crop", "Seeding – Class II" and "Straw Mulch" has been added for this work.

251-P02 SEEDING CLASS III: Use the following seed mix for all permanent seeding.

Species	Percentage by Weight
Purity / Germination	
Kentucky Bluegrass	60%
90% / 85%	
Creeping Red Fescue	10%
90% / 85%	
Fine Leaf Perennial Ryegrass	30%
95% / 90%	

Rate of Seeding = 220 Lbs/Acre

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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NOTES

Prior to or during grading and tillage operations, rake and clear the ground surface of all stumps, brush, sticks, roots, stones larger than 1/2 inch in diameter, concrete chunks, rebar, wire or other material that may hinder seeding and maintenance operations. Dispose of any accumulated material at no additional cost to the City/State.

Water the seeded areas sufficiently to moisten the seedbed to a depth of 2 inches. Apply water in a manner that provides uniform coverage and prevents erosion and damage to the final surface. Provide daily watering for the first five days and sufficient water to maintain surface moisture in the top 2 inches of the soil until such time as the grass (not cover crop) has been evenly established to a height of 2 inches. Include all cost for labor, equipment and materials necessary to complete the work in the price bid for "Seeding Class III".

251-P03 MOWING: If areas of seeding are completed and the turf becomes established, mow and maintain the seeded areas. Mow within 48 hours of notification by the Engineer in the field. Remove any clippings that land on locations other than the grassed area. Mow when grass is longer than 3" and/or as directed by the Engineer in the field. If the turf has not been established prior to project completion the mowing requirement shall be waived as directed by the Engineer. Include all cost for labor, equipment and materials necessary to complete the work in the price bid for "Seeding Class III".

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

302-P01 SALVAGED BASE COURSE: Do not substitute processed virgin aggregate in-place of the Salvaged Base Course as stated in Section 817.01 A. Only use processed virgin aggregate after exhausting all removed material and incorporating it into the Salvaged Base Course.

Measure Salvaged Base Course as in-place compacted volume (CY) for mainline aggregate. Do not adjust the measured volume due to additional shrinkage or loss.

302-P02 TRAFFIC SERVICE AGGREGATE: A quantity of 2,500 tons has been included to be used as shown in the plans and as directed by the Engineer.

570-P01 PCC PAVEMENT GRINDING: Grinding is anticipated to be required on existing pavement to remove conflicting existing grooved pavement markings and to blend existing to new pavement. The Engineer will determine the extent of grinding after new pavement is installed. This bid item should be used on existing pavements only.

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

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

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

Install liquid filled attenuation devices that are 2.5 feet wide.

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

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

Install devices according to the manufacturer's specifications.

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

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

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

704-P01 PRECAST CONCRETE MEDIAN BARRIERS - STATE FURNISHED: Obtain 377 barriers (10' x 2.5' units) 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 provided below:

Casselton Maintenance Yard
15482 37th Street SE
Casselton, ND 58012

Provide the connection bolt hardware for each 10' section of precast concrete median barrier, in accordance with Standard Drawing D-704-51. The hardware provided will become property of the NDDOT at the completion of the project. Include the cost for hardware 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

NOTES

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

Provide an operator trained in the use of the PCMS.

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

704-P03 BRIDGE DETOURS: The structure widening that is required at the 32nd Avenue South Interchange will require a bridge canopy to be constructed, partial bridge demolition, and placing new beams. Detour traffic in accordance with Standard Drawing D-704-52 with the addition of a portable changeable message signs at each off ramp location. Include any grading or surfacing required for construction of the detour in other items. These described detours shall only be permitted at night between the hours of 8:00 pm to 6:00 am or as approved by the Engineer in the field.

Prior to closing Interstate 29, notify the Public Information Coordinator (PIC), City of Fargo and NDDOT Fargo District 48 hours in advance of implementing the interstate detour. Make all signal timing modifications, and coordinate with the City of Fargo.

704-P04 TRAFFIC CLOSURES: Lane closures are not allowed on I-29 during the hours of 7:00 AM to 9:00 AM for NB I-29 and 4:00 PM to 6:00 PM for SB I-29 (weekdays) unless approved by the project Engineer.

An extended lane closure will be allowed for the construction of the SW Loop pavement adjacent to SB I-29. The outside lane of SB I-29 can be closed to accommodate the pavement removal and replacement. This lane closure will only be allowed for a maximum of 5 continuous calendar days.

704-P05 OVERHEAD SIGN STRUCTURES: Remove the overhead sign structure located on the NW Ramp of 32nd Avenue Interchange prior to placing head-to-head traffic on the NW Ramp as shown in Phase 2 WZTC. This includes the sign, sign truss, barriers, attenuating crash cushion and foundation.

The overhead sign structure to be removed over the traffic lanes for the 32nd Avenue NW exit ramp will require the ramp to be closed to traffic. A night-time closure of the exit ramp will be permitted for one night, between the hours of 10:00 pm and 6:00 am, to complete this work. During this time, provide a detour using a changeable message sign at the exit ramp location directing traffic to use 52nd Avenue South. The Engineer will determine the location and the message to be displayed.

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

1. Minimum total area of 800 square feet
2. Indoor bathroom facilities with weekly cleaning services
3. Hookups for heat, electricity, sewer, and potable water
4. Minimum cabinet space of 32 cubic feet
5. Minimum counter space of 60 square feet
6. A heating and cooling system that is capable of maintaining the temperature between 65°F and 78°F
7. Lighting with a minimum of 110 foot-candles
8. 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.
9. Supply a photocopier with enough toner to last the length of the project and with the following capabilities:
    a. Printing;
    b. Scanning; and
    c. 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
- Sewer
- Potable water

Make the field office available for occupancy one week before the start of the project 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:

- Furnishing office equipment;
- Supplying paper; and
- Supplying and paying for internet service.

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% when 30% of the work is complete.
- 75% when 60% of the work is complete.
- 100% when project is complete.

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708-P01 INLET PROTECTION SPECIAL: Place inlet protection as per the details. Include all costs for furnishing, installing, maintaining (cleaning), and replacing damaged devices in the bid price for “Inlet Protection Special”. Keep all installed devices in place until the turf has been established.

If the turf has not been established by November 1st, remove all installed devices in the street section that have potential to cause damage to snow removal equipment. Reinstall these devices in the spring as directed by the Engineer. No additional compensation will be provided as this work is considered normal maintenance.

714-P01 UNDERGROUND UTILITY INSTALLATION – “SU” PROJECT: Use the City of Fargo Standard Specifications for Construction (most current version) along with these Notes to govern the underground utility construction on this project from Sta 92+78 to Sta 115+75, and from Sta 138+95 to Sta 157+72. Backfill pipes within these station limits with Aggregate Base Course Class 3. Include all costs for backfill in the price bid for “Pipe Conc Reinf ____ Cl III-Storm Drain.”

714-P02 STORM SEWER MANAGEMENT: Manage all storm sewer systems for the duration of the project. This includes, but is not limited to phasing or optimizing the storm sewer removals and installation to maintain storm sewer drainage. If temporary storm sewer connections are unable to be completed, then pumping of storm water from existing to proposed drainage structures will be allowed, as long as traffic is not impacted. The Contactor shall submit a storm water management plan to the Engineer for approval before the start of the project. All costs associated with storm water management shall not be paid for separately but included in the price bid for “Pipe Conc Reinf ____ Cl III-Storm Drain.”

714-P03 SILTED PIPES: Clear all silt and debris from any pipe that is to be extended. Include all costs of removing the silt in the price bid for the pipe items.

714-P04 PIPE CONDUIT- STORM DRAIN CONNECTIONS: No field cutting of spiral rib pipe shall be allowed. Attach metal end sections to the ends of spiral rib pipe by standard metal bands or as approved by the Engineer.

714-P05 REMOVAL OF STORM SEWER PIPE AND STRUCTURES: Removal of all storm pipe shall be paid for under bid item “Removal of Pipe All Types and Sizes” on a linear foot basis and includes removing, backfilling, and disposing of all storm sewer pipe irrespective of the depth, pipe material, and/or size of pipe according to Section 1050 of the City of Fargo Standard Specifications. Backfilling shall be ND Modified Class 3 Aggregate and compacted to 95% of Standard Proctor Density.

714-P06 CONNECT TO EXISTING PIPE: For connections of proposed pipe to existing pipe and/or existing pipe to proposed manholes or inlets, the joints and/or connections shall meet the requirements of Section 1500 of the City of Fargo Standard Specifications or be per Manufacturer’s recommendations, as approved by the Engineer. The existing pipe material and size shown in Section 55 of the plan set is based on record drawings and field data, no additional compensation will be paid if the pipe is any different material or size.

714-P07 PLUG PIPE: At locations designated on the plans for plug and abandon pipe, blow the pipe full of sand or pump the pipe full of controlled density backfill to prevent any future collapse or failure of the abandoned pipe. Include all costs for labor, materials, and equipment in the price bid for “Plug Pipe – All Types and Sizes”.

714-P08 PIPE CONDUIT 24IN – SLIP LINER PIPE: Slip line the existing 36” CSP with a 24” Spiral Rib Pipe Conduit at Sta 118+41 and include the following:

1. Use coupler bands that will accommodate the limited clearance on the outside of the liner pipe.
2. Construct a temporary bulkhead at each end of the liner pipe to allow placement of grout. Place grout in a controlled manner to ensure balanced filing on all sides. Fill the void to its entirety.
3. Take steps necessary to counter the buoyancy of the liner pipe during the grouting process.
4. Clean all silt and debris out of the existing pipe before installing the liner pipe.

Include all costs to isolate the work area and to furnish and install the 24” Spiral Rib Pipe Conduit in the 36” CSP in the price bid for the item “Pipe Conduit 24IN – Storm Drain”.

714-P09 EDGEDRAIN NON PERMEABLE BASE: Achieve the openings required to outlet edge drains by coring the openings into manholes, inlets, and reinforced concrete pipe after they have been placed in the field. Connect all existing edge drains encountered to proposed edge drains or structures. Jackhammering will not be allowed to create these openings. A hand-held coring machine, capable of producing a clean cut circular hole, must be used. Placement of the edge drain openings must be such that the proposed grade of the edge drain is maintained. The diameter of the hole shall be sized to allow for a tight fitting seal and shall be water tight on each side of the inlet or manhole. All costs required for the described coring shall be included in the price bid for “Edgedrain Non Permeable Base.”

714-P10 PIPE BENDS: Between Inlet 55B and 55A, a 41° deflection angle is required in the "PIPE CONDUIT 15IN - STORM DRAIN" conduit, as shown in the plans. Install either a single prefabricated bend section or combine various smaller angle prefabricated bend sections to accomplish the required deflection.

Between Sta 118+40 - 98' Lt. and Manhole 55, a 52.5° deflection angle is required in the "PIPE CONDUIT 30IN - STORM DRAIN" conduit, as shown in the plans. Install either a single prefabricated bend section or combine various smaller angle prefabricated bend sections to accomplish the required deflection.

Slight deflections of adjacent pipe joints (up to one degree per joint) may be necessary and will be acceptable to field fit these installations.

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Include the cost for furnishing and installing the prefabricated bend sections in the prices bid for the items "PIPE CONDUIT 15IN - STORM DRAIN" and "PIPE CONDUIT 30IN - STORM DRAIN."

722-P01 INLETS AND MANHOLES: Inlets 51A, 55B, and 58B have been specified with a minimum 4-foot riser height. The lowest pipe invert elevation is higher than the (RCP) pipe wall thickness above the base elevation of the structure. Fill the void between inlet or manhole base and bottom of lowest pipe with Class AE-3 concrete, and then slope the inlet or manhole bottom to drain using concrete in accordance with the Section 20 Details. Include the costs to accomplish this work in the unit price bid for the respective inlet or manhole pay item.

722-P02 MANHOLE CASTING TYPE 1: Provide a Neenah R-1733, EJ1205Z, or approved equal manhole frame, solid lid with self-sealing lid and concealed pick bar or approved equal. See Section 20 Details.

722-P03 MANHOLE CASTING TYPE 2: Provide a Neenah R-1955-1 manhole frame, solid lid with self-sealing lid and concealed pick bar or approved equal. Replace existing manhole locations with a grated lid with a new, similarly grated lid approved by the Engineer. Replace the existing manhole castings in the new concrete pavement with a floating manhole casting. See Section 20 Details.

722-P04 ADJUST MANHOLE AND ADJUST INLET: Height adjustment of manholes and inlets outside the paving section shall be performed using engineered polymer rings.

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

When using precast reinforced concrete rings, the rings shall be free from cracks, voids, and other defects. Interior I/I Barrier, manufactured by Strike Products or approved equal, shall be used when height adjustment is performed utilizing round precast reinforced concrete rings. The casting and between each ring shall be sealed with a minimum 1/2" x 1/2" double bead of butyl rubber sealant in caulking form. Preformed butyl tape will not be allowed. Precast reinforced concrete rings shall be wrapped 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, the voids shall be filled with concrete. All precast reinforced concrete rings shall receive a four (4) inch wide concrete encasement placed 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. Taller rings shall be used where required to limit adjustment to 4 adjusting rings.

All existing manholes and inlets that are adjusted to grade shall receive new adjusting rings from existing structure to casting.

722-P05 ADJUST MANHOLE SPECIAL: For Manhole 54 located at Sta 118+41, 53' Lt – Lower the top elevation of the existing 60" storm sewer manhole by 1 foot. Remove the manhole casting, rings, concrete cover and top section of manhole riser. Replace the top section of riser with a new riser that is 1' shorter than the existing. Reset the concrete cover, rings and casting onto the new top riser section. Verify the required riser length prior to ordering materials. The contractor has the option of cutting 1' from the existing manhole riser in lieu of replacing the riser. Sawcut the existing riser with a diamond blade to create a level finished sawcut surface.

For other manholes on the project that require lowering or raising existing castings by greater than 1 foot – remove the existing cover, modify the existing manhole, and adjust the height of the existing manhole by removing or adding to the overall manhole build. If manhole has cone section, Contractor can remove the existing cone section and replace it with the appropriate section (an intermediate section or a shorter section). This bid item will only be used in areas that require height adjustment on existing structures due to new street grades. A maximum of 4 adjustment rings will be allowed per casting.

Section 50 of the plans shows the approximate adjustment heights required. Field verify the actual adjustment height prior to submitting work drawings. Include the costs for removal, disposal, materials, equipment and labor in the price bid for "Adjust Manhole Special".

722-P06 MANHOLES: Fabricate Manholes 52 and 55 in accordance with NDDOT Standard Drawing D-722-5. Include the cost for the manhole riser in the price bid for "Manhole ___". Construct all other manholes in accordance with the Section 20 Details shown in the plans. All new manholes on this project that are within the roadway pavement shall be floating castings.

The bottom of inlets or manholes shall be filled with concrete up to the elevation that will accommodate the lowest invert elevation. All joints for plastic pipe and edge drain connections shall be sealed gasketed joints. All costs to accomplish this work will be included in the unit price bid for the respective inlet or manhole.

724-P01 WATER MAIN SHUT DOWNS: Included in the plans is a water main layout for the immediate area. Water main valves requiring shut down for water connections as part of this project are shown along with their corresponding location ties. Using this information, the Contractor will be responsible for the following:

- Gate valve location
- Coordination with Mains and Hydrants Department for cleaning and operating if required. Contact Terry Schmidt or Bob Hoffman with Mains and Hydrants at 241-1453.

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- Complying with all other provisions of Section 1300.3.b of the City of Fargo Standard Specifications.
- Notify all properties affected by shutdown a minimum of 48 hours prior to shutdown. The Contractor will be required to work with affected properties/businesses to schedule a time frame to shut down the water main that would be acceptable. All shut downs shall be scheduled to be completed after hours (when businesses are closed) or during acceptable non-peak hours. If an agreement cannot be reached, provide temporary water service to the business paid for as "Temporary Water Service."

724-P02 WATER TOWER AT 3220 32ND AVE S: Contact Troy Hall, City of Fargo Water Utility Director, 701-476-6741 minimum of 48 hours prior to work commencing, to coordinate on scheduling shutdown for installation of the new gate valve at Sta 148+47 Rt.

724-P03 REMOVE HYDRANT: Remove and salvage hydrant, hydrant valve, and valve box and deliver to City Personnel at the City of Fargo cold storage site at 2401 5th Avenue North, Fargo. All costs for removing, salvaging, and delivery of the hydrants shall be included in the price bid for "Remove Hydrant."

724-P04 CONNECTION TO EXISTING MAIN: This item includes all costs associated with the work to connect proposed pipe to existing pipe. The joints, couplings, and/or connections shall meet the requirements of Section 1500 of the City of Fargo Standard Specifications or be per manufacturer's recommendations, as approved by the Engineer. The existing pipe material and size shown in Section 55 of the plan set is based on record drawings. Removing existing water main plugs prior to making a new connection to the existing main shall be included in the price bid for "Connection to Existing Main."

724-P05 WATERMAIN DISINFECTION: Excavate the existing water main to provide a minimum 18 inches of clearance all around the pipe. Pump the discharge water and maintain a level below the existing water main to prevent contaminates entering existing water main system. Maintain a flow from each direction of existing water main to prevent backflow into pipe.

Disinfect all pumping equipment, piping, appurtenances and all other equipment in contact with potable water prior to use. Do not use water trucks for disinfection of water main.

Prior to installation:

- Jet all new sections of water main pipe both directions with pressurized potable water to remove any debris. Pressure wash all new couplings, valves, and fittings with potable water.
- Swab or spray the pipe, couplings, valves, and fittings with a minimum 1 % chlorine solution to disinfect the interior surfaces.
- Protect the interiors of pipes, couplings, valves, and fittings from contamination until installation.

Following installation:

- Flush the main.
- Coordinate with all property owners affected by shutdowns to flush their systems.

Include all costs for disinfecting and flushing water main in the price bid for "Watermain ___ PVC."

724-P06 EXISTING WATERMAIN ELEVATION: To verify the existing water main elevation, expose the top of pipe in various locations (up to 3) as directed by Engineer prior to installing the underground utilities. Include all costs for this work in the price bid for "Watermain ___ PVC."

724-P07 GATE VALVE BOXES: Inspect the gate boxes and drop a key on each valve prior to construction.

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 338 Leather, produced by Solomon Colors, Inc. http://www.solomoncolors.com/;
2. Number 61078 Adobe, produced by Davis Colors http:/www.daviscolors.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. Pattern shall be Pinwheel Brick Pattern.

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

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750-P02 SIDEWALK CONCRETE REINF: Saw contraction joints in a timely manner and construct every 4.5' on the 8 or 10' wide shared use path and every 4.5' on the sidewalk. Place one half-inch expansion joint at intervals not to exceed 150'.

Use a No. 3 deformed reinforcing bar placed 24" o.c. both ways on all sidewalks. The bar shall be six (6) inches shorter than the width of the slab and placed accurately at one-half the depth of the slab. Use plastic chairs.

Use No. 3 bars 24" o.c. both ways on the shared use path. Use four (4) No. 3 bars 10' long, centered over new utility trenches for both the sidewalk and shared use path. Place and compact the aggregate base to the required uniform section prior to setting forms for the concrete sidewalk.

Saw all longitudinal and transverse joints. Saw a centerline longitudinal joint on the 8' or wider shared use path. Match the existing elevation for newly placed concrete within +/-1/8” of all adjoining concrete. Remove any placed concrete not properly matching elevations as deemed by the Engineer, and replace at the contractor’s expense. Include all items listed above in the price bid for “Sidewalk Concrete Reinf” and “Sidewalk Concrete 4In.”

750-P03 DETECTABLE WARNING PANELS: Use cast-in-place, unpainted cast iron plates manufactured by East Jordan Iron Works, Neenah Foundry, or approved equal.

752-P01 CHAIN LINK FENCE: The contractor may salvage the existing chain link fence fabric from the fence that is removed. He shall be allowed to use this salvaged fabric for the proposed fencing that is required. Portions of the chain link fabric shall only be re-used if it is determined to be of satisfactory condition by the engineer in the field. If it is determined that the fabric is in unsatisfactory condition, the proposed fence shall be constructed with new material. Include all costs for this described work in the price bid for “Fence Chain Link”.

752-P02 TEMPORARY SAFETY FENCE: A quantity of 1,000 LF has been added to be used as directed by the Engineer. Payment includes the removal of the temporary safety fence.

754-P01 OBJECT MARKERS - CULVERTS: Remove existing object markers located at culvert end sections that are impacted by earthwork activities and pipe replacements. Include the cost for removal and disposal in the price bid for “Object Markers – Culverts”.

762-P01 TEMPORARY PAVEMENT MARKING: If the project is not complete by the completion date, place temporary pavement markings at the Contractor’s expense. Use epoxy for all temporary pavement markings if the permanent markings cannot be placed until the following year. Otherwise, use water-based paint.

766-P01 MAILBOX: If a mailbox is shown to be reset to a different location along the street than where it was originally, notify the affected businesses and the US Postal Service of the new location.

806-P01 GROUT: Use the pressure grout method to fill the voids between the 24” spiral rib liner and 36” CSP.

Form the opening sufficiently at the inlet and outlet ends of the pipe to provide a smooth, even surface between the liner and the existing 36” CSP.

Use a grout mixture of one part cement and five parts fine aggregate, by volume, with 7 pounds of bentonite added for each sack of cement (based on a 200-barrel yield bentonite.) Adjust the amount of bentonite added per sack of cement proportionally, if the yield of bentonite varies. Use the minimum slump necessary to facilitate placement. Use grout materials that meet the following requirements:

1. Cement as specified in Section 804 of the Standard Specifications.
2. Fine aggregate meeting the requirements of Subsection 802.01 C.3 of the Standard Specifications.
3. Commercially packaged bentonite.

Maintain grout injection pressures to fill the void without causing deformation of the liner. Include mixing and batching facilities, a pump specifically designed for pressure injection of grout, pipe, hose, and fixtures to convey the grout into the void in the grouting equipment. Calibrate all equipment before beginning work. Continually monitor grout pump pressures with a liquid-filled diaphragm in-line gauge.

Include all costs of materials, equipment and labor to pressure grout the void in the price bid for “Grout”.

930-P01 CONCRETE MODULAR BLOCK RETAINING WALL: The concrete modular block wall shall conform to the following requirements:
1. Special Provision 392(14) – “Modular Retaining Wall System”.
2. The concrete modular block retaining wall shall be constructed to the same lines and grades as shown in the plans. The wall shall have a modular block facing.
3. Following approval of a block type, color samples of the block units shall be submitted to the Fargo District for selection.

970-P01 REPLANT TREES (“IM” PROJECT): This work consists of removing and replanting trees within the “IM” portion of the project (32nd Avenue South Interchange, Sta 115+75 to Sta 138+95). The described trees were originally planted in 2004. Remove and replant the trees as shown in the Landscaping plan sheets (IM project) shown in Section 85. Remove 61 trees and replant only 51. The contractor shall pick the healthiest trees to be replanted. Transplant the trees prior to the earth moving operations.

Transplant trees only when dormant, preferably in the early spring, unless otherwise directed by the Engineer. Remove the trees with a solid ball of earth around the roots. Provide a ball with a diameter not less than 10 times the diameter of the trunk of the tree measured 1 ft above the surface of the ground. Provide a ball depth not less than 60% of its diameter for balls

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up to 48 in diameter. For balls over 48 in diameter provide a ball with sufficient depth to maintain a solid structure and to encompass all the feeding roots under the ball area. Use a mechanical tree spade to replant the trees. Power shovels and similar machinery may not be used in digging the ball except with written permission.

Prior to placing topsoil within the tree pits rototill the bottom of the tree pit to a minimum 6” depth within. Break up large clumps, remove any extraneous material, and re-shape the subgrade prior to placing topsoil.

Water the root ball of the tree thoroughly prior to removal to keep the root ball intact and reduce as much soil loss as possible during transports. Maintain the ball as a solid unit when moving the tree. Keep the ball moist at all times during transplanting operations.

Take care to prevent injury to the tree during the transplanting operation. Protect all parts of the tree. Tie branches out of the way of possible injury. Do not attach chains, cables, or heavy ropes to the trunk or branches without protective padding adequate to prevent bruising or other injury.

Replant the trees to a 40’ center to center tree spacing. Position the tree in the new hole 2-3” higher than the original grade to allow for settling. Water the newly transplanted trees by the end of the same day they are planted so the original soil ball and surrounding soil is saturated to a depth of 12”. Apply water slowly to entire area, allowing adequate penetration. Complete the watering operation in a manner such that the tree settles into a plumb position.

Stake the trees with two or more painted T-shaped steel posts securely inserted to a 3’ depth and outside the root system. Extend a galvanized guy wire from the tree stake to a polypropylene strap around the tree trunk.

Provide mulch materials that are free of all foreign debris. Present mulch samples to the Engineer for approval. Obtain approval for mulch material prior to installation. Mulch material installed without prior approval will be removed from the project. Ensure that all plant pits and beds are entirely free of weed or grass growth and free of live roots at the time mulch is applied. Keep mulch 6” away from the tree trunks. Cover the disturbed surface area of plant beds and pits evenly and uniformly to a 4” depth with bark mulch or as directed by the Engineer.

Protect and care for the trees until November 1, 2017. Water them weekly during dry weather or as otherwise directed. Provide a 20 gallon slow release supplemental water bag for each tree transplanted. Protect the trees from damage and from diseases and insect pests.

Include the cost for all equipment, materials, and labor required to remove and replant, maintain and water the trees in the unit price "Replant Trees.”

970-P02 TREES (“SU” PROJECT): The work for planting new trees as shown in Section 85 within the “SU” portion of this project (32nd Avenue South from Sta 92+78 to Sta 115+75, and from Sta 138+95 to Sta 157+72), shall conform to Section 7000 of the City of Fargo Standard Specifications for Construction (most current version).

970-P03 LANDSCAPE PLANTINGS: Restore all disturbed landscaping, rock beds, planting beds, irrigation systems, and electrical systems on private property to their original condition, to the satisfaction of the Engineer. Include all costs associated with this work in the price bid for “Landscape Plantings.”

This document was originally issued and sealed by Matthew T. Kinsella, Registration Number PE-5692, on 11/17/16 and the original document is stored at the North Dakota Department of Transportation.

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770-P01 HIGH MAST LIGHTING SEQUENCING: Install new high mast conductor prior to disturbing the existing lines and prior to earthwork operations for the SW Loop. Construct the cable trench type II depths to match the proposed grades not the existing ground. See the cross sections for the SW Loop.

770-P02 LIGHTING SYSTEM LUMINAIRES: Provide the following luminaires or approved equal:
AEL, Autobahn Series ATB2 (Catalog No.: ATB2 60BLEDE10 MVOLT R2.)
216W LED, 1000mA, 4000k, Type II, Gray

Standards with a single luminaire will require a Holophane bracket arm (model BR-1055-HG) for horizontal tenon mount. The Schreder, Teceo 2 does not require the additional bracket arm. Double headed standards do not require the bracket arm.

Include the cost for the luminaire, bracket arm, and all other materials in the unit price bid for “Lighting System B.”

770-P03 LIGHTING SYSTEM STANDARDS: Provide the following light standards or approved equal:
Millerbernd 40’ stainless steel standards with frost finish. Include breakaway "H" base and 2-3/8" OD slipfitter without a mast arm.

Include the cost of the light standards in the unit price bid for “Lighting System B.”

770-P04 INTERIM TRAFFIC SIGNALS: Provide 3 interim traffic signal systems. The locations of the interim traffic signals are:

1. The west ramps of I29 and 32nd Avenue
2. The east ramps of I29 and 32nd Avenue
3. The intersection of 32nd Avenue and 36th Street

770-P05 REVISE LIGHTING SYSTEM: Install new conduit and conductor as shown in the plans for the high mast lighting system. Install new conductors prior to disturbing the existing lines. Revise the lighting system prior to earthwork operations for the SW Loop. Construct the cable trench depths to match the proposed grades not the existing ground. See the cross sections for the SW Loop. Include all costs for the work related to revising the high mast lighting system in the unit price bid for, “Revise Lighting System.”

772-P01 INTERCONNECT CABLE REINSTALLATION AND SEQUENCING: Cut the existing interconnect cable in the existing IT pull box at 126+19 – 652’ rt (PR32_APX). Remove and install new conduit as shown in the plans. Reinstall the existing interconnect cable in the new conduit and install a splice in the existing pull box at 126+19 – 652’ rt. Make improvements to the IT System prior to earthwork operations for the SW Loop. Construct the cable trench type II depths to match the proposed grades not the existing ground. See the cross sections for the SW Loop. Contact Lyle Landstrom at the NDDOT Fargo District and coordinate with him prior starting to any ITS work. Include all costs associated with this work in the unit price bid for “Interconnect Cable.”

772-P02 IT-PULL BOX: Provide and install a polymer concrete extension for the existing IT pull box at 126+13 - 145.2’ rt. (PR32_APX) that is compatible with the existing pull box is a Quazite assembly. Verify that the existing pull box is a Quazite PG3048BA36 pull box. Provide an approximate 2’ extension for the IT pull box.

980-P01 REMOVE ROAD CLOSURE GATE: Remove the existing road closure gate and coordinate delivery to the NDDOT Maintenance Storage Yard in Fargo. Work with the project engineer to deliver the gate. The address of the Storage Yard is:

503 38th Street South
Fargo, ND

Include the cost of removal and delivery to the storage yard in the contract unit price of “Remove Road Closure Gate.”

980-P02 VERTICAL ROAD CLOSURE GATE: Install the vertical road closure gate on the light standard at the specified location as shown in the Lighting layouts. Include all costs in the price bid for the items “Vertical Road Closure Gate–40 FT.”

This document was originally issued and sealed by Aaron Murra, Registration Number PE-6536, on 11/16/2016 and the original document is stored at the North Dakota Department of Transportation.

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754-P01 REMOVE SIGNS: All signs removed from the project, which will not be reset, except the extruded aluminum sign panels, shall become property of the contractor.

Deliver the sign panels to the NDDOT Maintenance Storage Yard in Fargo during regular business hours, and neatly stack them at a location designated by the engineer. The address of the Storage Yard is:

FARGO NDDOT
503 38th Street South
Fargo, ND 58103

Include all costs in the price bid for the items “Panel for Signs-Type IV Refl Sheeting” and “Panel for Signs-Type XI Refl Sheeting.”

754-P02 REMOVE SIGN SUPPORTS: All sign supports removed from the project, except the surface mount breakaway bases, shall become property of the contractor.

Deliver the surface mount breakaway bases to the City of Fargo during regular business hours, and neatly stack them at a location designated by the engineer.

Include all costs in the price bid for the items “Steel Galv Posts-Telescoping Perforated Tube,” “Galv Steel Post-Standard Pipe,” and “Galv Steel Posts-W-Shape Posts (Two or More).”

754-P03 REMOVE SIGN FOUNDATION
Remove foundations to a depth of 3 feet below the final ground line.

754-P04 REMOVE OVERHEAD SIGN STRUCTURE
Remove foundations to a depth of 3 feet below the final ground line.

754-P05 REVISE OVERHEAD SIGN STRUCTURE
Remove the existing signs and sign attachment hardware. Revise the overhead sign structures as shown.

The item “Revise Overhead Sign Str ____” will be measured for per location.

Such payment is full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

SECTION 130

764-P01 REMOVE ATTENUATING CRASH CUSHION: Remove two attenuating crash cushions TL-3 from overhead sign foundations at Sta 9+72 32nd Ave S NWR, and five attenuating crash cushions TL-2 at signal standards on 32nd Ave S at Sta 121+40, Sta 122+72, and Sta 134+30. All of the crash cushions are anchored to concrete slabs, which are to be removed.

The two crash cushions removed at the overhead sign foundations, Sta 9+72 NWR are TRACCs manufactured by Trinity Industries, Inc.

Four of the attenuating crash cushions removed at the 32th Ave S signal standards, Sta 121+40 and Sta 134+30 are 3 Bay Quadguards manufactured by Energy Absorption. The crash cushion removed at the 32th Ave S signal standard at Sta 122+72 is a 2 Bay Quadguard manufactured by Energy Absorption.

Deliver the removed crash cushions to the NDDOT Maintenance Storage Yard in Casselton, and neatly stack them at a location designated by the engineer. The address of the NDDOT Maintenance Storage Yard is:

CASSELTON NDDOT
15482 37th St SE
Casselton, ND 58012-9748

Include all costs for removal of the crash cushions, including the removal of the concrete base, and delivery and stacking of the removed attenuating crash cushion materials in the contract unit price bid for the items "Remove Attenuating Crash Cushion TL-2,” and "Remove Attenuating Crash Cushion TL-3.”

764-P02 ATTENUATING CRASH CUSHION TL-2: Install attenuating crash cushion TL-2 units at the signal standards on 32nd Ave S at Sta 121+49 and 134+49 that are 6 inches wider than the signal standard. Install the crash cushions with 1 inch of clearance between the back of the rail and the face of the signal standard on the back side of the crash cushion, and 5 inches of clearance on the approach side of the crash cushion. Anchor the steel post type backups on concrete slabs in accordance with the manufacturer's recommendations.

Include all costs to furnish and install the crash cushions complete with steel post backups, and concrete slabs, in the contract unit price bid for "Attenuating crash cushion TL-2."

Submit shop drawings for attenuating crash cushion TL-2 installations to the engineer for review.

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NOTES

SECTION 150

772-P01 PAINT / FINISH: Provide traffic signal components painted / finished in accordance with the following:

Transformer base – black
Pole – black
Mast arm - black
Luminaire extension – stainless steel with frost finish
Signal head mounting hardware – black
Signal housing – black

772-P02 VIDEO DETECTION SYSTEM: Provide an Econolite Autoscope Vision video detection system.

Include a video monitor in the controller cabinet for viewing the video.

Provide a spare video detection camera and communications interface panel. Deliver the spare equipment to the Fargo District.

Include the cost of the video detection system, video monitor, and spare equipment in the items “Traffic Signal System – Site 1” and “Traffic Signal System – Site 2”.

772-P03 ADDITIONAL CONDUIT: Install one additional 2-inch diameter conduit in the new controller foundations. Face the conduit east at the west ramp intersection and west at the east ramp intersection. Cap the conduits underground and cap the conduits in the controller cabinet with a 2” expandable metal plug and label which direction the conduits are facing. Include the cost of the additional conduits in the items “Traffic Signal System – Site 1” and “Traffic Signal System – Site 2”.

772-P04 CONTROLLER AND CABINET: Provide a Model M-60 Series controller manufactured by Siemens. The traffic counting capability of the controller shall be fully operational.

Provide a Fargo Type B cabinet.

Include the cost of the Controller and Cabinet in the items “Traffic Signal System – Site 1” and “Traffic Signal System – Site 2”.

772-P05 EMERGENCY VEHICLE PRE-EMPTION: Provide EVP equipment fully compatible with the other EVP equipment used within the City of Fargo. Supply a white confirmation light at the same location on the mast arm as the EVP detector.

772-P06 BATTERY BACK-UP: Equip the signal controller with an "on-line" type Uninterruptible Power Supply (UPS) that provides power conditioning in both normal and backup mode. Size to provide backup power to the intersection warning system for a minimum of 8 hours. The UPS shall have aux contacts to put the system into flash operation. The UPS shall incorporate full power management and diagnostic function.

Install the UPS in a temperature and humidity controlled environment. Include all materials, labor and equipment necessary to furnish and install the battery back-up in the item "Traffic Signal System – Site 1” and Traffic Signal System – Site 2”.

772-P07 FIBER OPTIC CABLE: Provide a fiber optic cable with a 24 strand fiber multi-mode/84 strand single mode hybrid optic cable suitable for outside plant operations manufactured by OCC Fiber or Superior Essex. The cable is a loose tube, single jacket, all dielectric cable design. The buffer tubes are gel filled, and the cable has a dielectric central strength member and a dry water blocking system. Tube colors are multi-mode blue tube fibers 1-12, multi-mode orange tube fibers 13-24, single-mode green tube fibers 25-36, single-mode brown tube fibers 37-48, single-mode slate tube fibers 49-60, single-mode white tube fibers 61-72, single-mode red tube fibers 73-84, single-mode black tube fibers 85-96, and single-mode yellow tube 97-108.

Include the cost of the Fiber Optic Cable in the item “IT System”.

772-P07 TRAFFIC SIGNAL BASE: Use the alternate signal standard base from Standard Drawing D-772-2 for the signal standards at Sta 121+49-11’ rt and Sta 123+56-10.33’ rt at the east ramp intersection and Sta 134+37.5-0.5’ rt at the west ramp intersection.

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ENVIRONMENTAL NOTES

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

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

EN-2 TREE REMOVAL AND MITIGATION: Coordination is required with the City of Fargo Forestry Department regarding tree removal, replanting, and mitigation.

EN-3 EMERGENCY RESPONDER ACCESS: An access route for emergency responders shall be maintained at all times to and from Essentia Hospital, 3000 32nd Avenue South, Fargo.

EN-4 STORM WATER QUALITY: Post-construction storm water quality shall be considered as part of the ND NPDES MS4 General Permit obligations.

EN-5 MIGRATORY BIRDS: Active migratory bird nests with eggs or chicks are protected by the Federal Migratory Bird Treaty Act. NDDOT's special provision, SP 004(14) for compliance with the Federal Regulation is to be followed.

This document was originally issued and sealed by Matthew T. Kinsella, Registration Number PE-5692, on 12/05/16 and the original document is stored at the North Dakota Department of Transportation.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	8	1

IM-8-029(166)062

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-8-984(152)155	IM-8-029(166)062	IM-8-029(166)062 Drainage	City of Fargo	TOTAL
103	0100	CONTRACT BOND	L SUM	0.4	0.6	-	-	1.0
108	0001	CRITICAL PATH METHOD SCHEDULE	L SUM	0.4	0.6	-	-	1.0
201	0331	CLEARING & GRUBBING-SITE 1	L SUM	1	-	-	-	1
201	0332	CLEARING & GRUBBING-SITE 2	L SUM	-	1	-	-	1
202	0111	REMOVAL OF CONCRETE	L SUM	-	1	-	-	1
202	0113	REMOVAL OF CONCRETE	CY	-	30	-	-	30
202	0136	REMOVAL OF PAVEMENT	TON	33,225	22,508	-	-	55,733
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	2,508	1,232	-	-	3,740
202	0210	REMOVAL OF MANHOLES	EA	4	2	-	-	6
202	0230	REMOVAL OF INLETS	EA	25	9	-	-	34
202	0235	REMOVAL OF CATCH BASIN	EA	6	-	-	-	6
202	0310	REMOVAL OF CHAIN LINK FENCE	LF	-	449	-	-	449
202	0312	REMOVE EXISTING FENCE	LF	107	-	-	-	107
202	0400	REMOVAL OF RIPRAP - LOOSE ROCK	CY	4	81	-	-	85
203	0101	COMMON EXCAVATION-TYPE A	CY	9,779	25,884	-	-	35,663
203	0109	TOPSOIL	CY	2,676	19,554	-	-	22,230
203	0121	TOPSOIL-WETLAND	CY	-	364	-	-	364
203	0122	TOPSOIL-DEPT OPTION BORROW AREA	CY	-	350	-	-	350
203	0138	COMMON EXCAVATION-SUBCUT	CY	1,300	-	-	-	1,300
203	0140	BORROW-EXCAVATION	CY	-	32,774	-	-	32,774
210	0050	BOX CULVERT EXCAVATION	EA	-	1	-	-	1
210	0099	CLASS 1 EXCAVATION	L SUM	-	1	-	-	1
210	0201	FOUNDATION PREPARATION	EA	-	1	-	-	1
210	0210	FOUNDATION FILL	CY	-	2,050	-	-	2,050
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	-	1	-	-	1
216	0100	WATER	M GAL	539	665	-	-	1,204
230	0165	SUBGRADE PREPARATION-TYPE A-12IN	STA	46.47	-	-	-	46.47
251	0200	SEEDING CLASS II	ACRE	-	2.000	-	-	2.000
251	0300	SEEDING CLASS III	ACRE	3.487	22.364	-	-	25.851
251	1000	WETLAND SEED	ACRE	-	0.446	-	-	0.446
251	2000	TEMPORARY COVER CROP	ACRE	-	2.000	-	-	2.000
253	0101	STRAW MULCH	ACRE	-	2.000	-	-	2.000
253	0201	HYDRAULIC MULCH	ACRE	3.487	32.953	-	-	36.440
253	0301	BONDED FIBER MATRIX	ACRE	3.487	12.848	-	-	16.335
255	0103	ECB TYPE 3	SY	20	432	-	-	452
258	0100	CONCRETE SLOPE PROTECTION	SY	-	220.7	-	-	220.7
258	0200	REMOVE & REPLACE CONCRETE SLOPE PROTECTION	SY	-	44.7	-	-	44.7
260	0100	SILT FENCE UNSUPPORTED	LF	-	2,600	-	-	2,600

32nd Avenue South

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	8	2

IM-8-029(166)062

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-8-984(152)155	IM-8-029(166)062	IM-8-029(166)062 Drainage	City of Fargo	TOTAL
260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	-	2,600	-	-	2,600
261	0112	FIBER ROLLS 12IN	LF	6,776	24,315	-	-	31,091
261	0113	REMOVE FIBER ROLLS 12IN	LF	3,388	11,705	-	-	15,093
302	0050	TRAFFIC SERVICE AGGREGATE	TON	2,500	-	-	-	2,500
302	0101	SALVAGED BASE COURSE	CY	15,073	11,766	-	-	26,839
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	360	915	-	-	1,275
550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	SY	20,729	15,105	-	-	35,834
550	0320	12IN NON REINF CONCRETE PVMT CL AE-DOWELED	SY	10,546	10,182	-	-	20,728
570	0210	PCC PAVEMENT GRINDING	SY	12,848	-	-	-	12,848
570	0963	TRANSVERSE PCC JOINT CLEANING & SEALING	LF	8,688	8,637	-	-	17,325
570	0965	LONGITUDINAL PCC JOINT CLEANING & SEALING	LF	8,477	7,334	-	-	15,811
602	0130	CLASS AAE-3 CONCRETE	CY	-	374.4	-	-	374.4
602	1130	CLASS AE-3 CONCRETE	CY	-	119.6	-	-	119.6
602	1134	PILE SUPPORTED APPROACH SLAB	SY	-	553.8	-	-	553.8
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	-	553.8	-	-	553.8
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	-	3,151	-	-	3,151
606	1209	12FT X 9FT PRECAST RCB CULVERT	LF	-	90	-	-	90
606	5209	12FT X 9FT PRECAST RCB END SECTION	EA	-	2	-	-	2
612	0115	REINFORCING STEEL-GRADE 60	LBS	-	14,494	-	-	14,494
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	-	79,265	-	-	79,265
616	5890	STRUCTURAL STEEL	L SUM	-	1	-	-	1
622	0020	STEEL PILING HP 10 X 42	LF	-	3,150	-	-	3,150
622	0040	STEEL PILING HP 12 X 53	LF	-	1,890	-	-	1,890
624	0126	PEDESTRIAN CANOPY	LF	-	264.3	-	-	264.3
650	0704	OVERLAY CONCRETE	CY	-	144	-	-	144
650	0710	CLASS 1-H REMOVAL	SY	-	2,702	-	-	2,702
650	0711	CLASS 2-H REMOVAL	SY	-	675	-	-	675
650	0712	CLASS 3-H REMOVAL	SY	-	135	-	-	135
702	0100	MOBILIZATION	L SUM	0.4	0.6	-	-	1.0
704	0100	FLAGGING	MHR	8,060	5,000	-	-	13,060
704	1000	TRAFFIC CONTROL SIGNS	UNIT	8,770	3,761	-	-	12,531
704	1035	ATTENUATION DEVICE-TYPE B-25	EA	-	2	-	-	2
704	1045	ATTENUATION DEVICE-TYPE B-75	EA	-	4	-	-	4
704	1051	TYPE II BARRICADE	EA	23	-	-	-	23
704	1052	TYPE III BARRICADE	EA	134	58	-	-	192
704	1060	DELINEATOR DRUMS	EA	1,450	414	-	-	1,864
704	1067	TUBULAR MARKERS	EA	100	63	-	-	163
704	1072	FLEXIBLE DELINEATORS	EA	300	-	-	-	300

32nd Avenue South

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	8	3

IM-8-029(166)062

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-8-984(152)155	IM-8-029(166)062	IM-8-029(166)062 Drainage	City of Fargo	TOTAL
704	1080	STACKABLE VERTICAL PANELS	EA	-	295	-	-	295
704	1085	SEQUENCING ARROW PANEL-TYPE A	EA	4	-	-	-	4
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	-	3	-	-	3
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	3,305	4,210	-	-	7,515
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	-	377	-	-	377
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	2	-	-	4
706	0400	FIELD OFFICE	EA	1	1	-	-	2
706	0500	AGGREGATE LABORATORY	EA	-	1	-	-	1
708	1531	INLET PROTECTION-FIBER ROLL 12IN	EA	26	-	-	-	26
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN	EA	14	-	-	-	14
708	1540	INLET PROTECTION-SPECIAL	EA	114	20	-	-	134
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	50	20	-	-	70
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	-	210	-	-	210
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	40,013	1,275	-	-	41,288
710	0410	REMOVAL OF TEMP CONNECTION	EA	-	1	-	-	1
714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN	LF	853	-	-	-	853
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN	LF	950	-	-	-	950
714	0405	PIPE CONC REINF 21IN CL III-STORM DRAIN	LF	365	-	-	-	365
714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN	LF	262	14	-	-	276
714	0870	PIPE CONC REINF 33IN CL III-STORM DRAIN	LF	51	-	-	-	51
714	3005	END SECT-CONC REINF 15IN	EA	1	-	-	-	1
714	4097	PIPE CONDUIT 15IN-STORM DRAIN	LF	-	224	258.0	-	482
714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	-	965	-	-	965
714	4107	PIPE CONDUIT 24IN-STORM DRAIN	LF	-	305	137	-	442
714	4112	PIPE CONDUIT 30IN-STORM DRAIN	LF	-	55	-	-	55
714	4117	PIPE CONDUIT 36IN-STORM DRAIN	LF	-	238	-	-	238
714	4124	PIPE CONDUIT 36IN-JACKED OR BORED	LF	-	504	-	-	504
714	7030	PIPE PVC 12IN	LF	114	110	-	-	224
714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	-	3	-	-	3
714	9696	EDGEDRAIN NON PERMEABLE BASE	LF	8,504	-	-	-	8,504
722	0100	MANHOLE 48IN	EA	6	-	-	-	6
722	0110	MANHOLE 60IN	EA	2	-	-	-	2
722	0120	MANHOLE 72IN	EA	-	1	-	-	1
722	0130	MANHOLE 84IN	EA	-	1	-	-	1
722	0317	MANHOLE CASTING TYPE 1	EA	3	-	-	-	3
722	0318	MANHOLE CASTING TYPE 2	EA	10	-	-	-	10
722	2490	MANHOLE STORM CONNECTION	EA	19	-	-	-	19
722	2500	MANHOLE SPECIAL	EA	3	-	-	-	3

32nd Avenue South

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	8	4

IM-8-029(166)062

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-8-984(152)155	IM-8-029(166)062	IM-8-029(166)062 Drainage	City of Fargo	TOTAL
722	3499	INLET	EA	7	-	-	-	7
722	3510	INLET-TYPE 2	EA	15	15	-	-	30
722	3520	INLET-TYPE 2 DOUBLE	EA	16	2	-	-	18
722	3701	INLET SPECIAL-TYPE 2 48IN	EA	2	2	-	-	4
722	3766	INLET SPECIAL-TYPE 2 72IN	EA	-	1	-	-	1
722	3910	INLET SLOTTED DRAIN 15IN	LF	-	130	-	-	130
722	6160	ADJUST INLET	EA	8	-	-	-	8
722	6200	ADJUST MANHOLE	EA	10	-	-	-	10
722	6201	ADJUST MANHOLE SPECIAL	EA	15	1	-	-	16
722	6240	ADJUST UTILITY APPURTENANCE	EA	19	-	-	-	19
724	0210	FITTINGS-DUCTILE IRON	LBS	-	-	-	630	630
724	0270	REMOVE GATE VALVE & BOX	EA	-	-	-	11	11
724	0300	GATE VALVE & BOX 6IN	EA	-	-	-	7	7
724	0317	GATE VALVE & BOX 16IN	EA	-	-	-	1	1
724	0410	HYDRANT-INSTALL 5IN	EA	-	-	-	10	10
724	0430	REMOVE HYDRANT	EA	-	-	-	10	10
724	0550	TAPPING SLEEVE & VALVE 16IN X 6IN	EA	-	-	-	3	3
724	0670	TEMPORARY WATER SERVICE	L SUM	-	-	-	1	1
724	0810	WATERMAIN 6IN PVC	LF	-	-	-	235	235
724	0852	WATERMAIN 16IN PVC	LF	-	-	-	47	47
724	0944	CONNECTION TO EXISTING MAIN	EA	-	-	-	11	11
724	1536	CURED-IN-PLACE PIPE-36IN	LF	-	-	-	1,296	1,296
748	0120	CURB & GUTTER MOUNTABLE-TYPE I	LF	168	-	-	-	168
748	0140	CURB & GUTTER-TYPE I	LF	9,692	3,504	-	-	13,196
748	0190	CURB & GUTTER-TYPE I 30IN	LF	8,743	6,696	-	-	15,439
748	0520	CURB-TYPE I	LF	53	-	-	-	53
750	0030	PIGMENTED IMPRINTED CONCRETE	SY	2,319	2,575	-	-	4,894
750	0101	SIDEWALK CONCRETE REINF	SY	6,250	1,660	-	-	7,910
750	0115	SIDEWALK CONCRETE 4IN	SY	-	43	-	-	43
750	0200	CONCRETE MEDIAN PAVING	SY	-	153.4	-	-	153.4
750	0210	CONCRETE MEDIAN NOSE PAVING	SY	50	79	-	-	129
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED	SY	1,102	-	-	-	1,102
750	2115	DETECTABLE WARNING PANELS	SF	582	88	-	-	670
752	0600	FENCE CHAIN LINK	LF	-	490	-	-	490
752	0911	TEMPORARY SAFETY FENCE	LF	500	500	-	-	1,000
752	3100	CORNER ASSEMBLY CHAIN LINK	EA	-	7	-	-	7
752	4160	DOUBLE BRACE ASSEMBLY CHAIN LINK	EA	-	2	-	-	2
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	321	314	-	-	635

32nd Avenue South

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	8	5

IM-8-029(166)062

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-8-984(152)155	IM-8-029(166)062	IM-8-029(166)062 Drainage	City of Fargo	TOTAL
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	104	160	-	-	264
754	0193	FLEXIBLE DELINEATORS-TYPE D	EA	27	5	-	-	32
754	0196	DIAMOND GRADE DELINEATORS-TYPE B	EA	-	8	-	-	8
754	0198	DIAMOND GRADE DELINEATORS-TYPE D	EA	-	18	-	-	18
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	736	245	-	-	981
754	0210	GALV STEEL POST-STANDARD PIPE	LF	-	288	-	-	288
754	0214	GALV STEEL POSTS-W-SHAPE POSTS(TWO OR MORE)	LF	-	209	-	-	209
754	0530	PANEL FOR SIGNS-TYPE XI REFLECTIVE SHEETING	SF	-	1,865	-	-	1,865
754	0534	PANEL FOR SIGNS-TYPE IV REFLECTIVE SHEETING	SF	-	726	-	-	726
754	0541	OVERLAY PANEL-TYPE IV REFLECTIVE SHEETING	SF	-	257	-	-	257
754	0542	OVERLAY PANEL-TYPE XI REFLECTIVE SHEETING	SF	-	740	-	-	740
754	0592	RESET SIGN PANEL	EA	7	3	-	-	10
754	0801	OBJECT MARKERS - TYPE I	EA	-	1	-	-	1
754	0805	OBJECT MARKERS - CULVERTS	EA	-	31	-	-	31
754	1100	CLASS AE CONCRETE-SIGN FOUNDATIONS	CY	-	25.9	-	-	25.9
754	1104	REMOVE SIGN FOUNDATION	EA	-	17	-	-	17
754	1211	OVERHEAD SIGN STR BRIDGE MOUNTED	EA	-	2	-	-	2
754	1220	REMOVE OVERHEAD SIGN STR BRIDGE MOUNTED	EA	-	2	-	-	2
754	1240	REVISE OVERHEAD SIGN STR BRIDGE MOUNTED	EA	-	1	-	-	1
754	1305	OVERHEAD SIGN STR 20FT CANTILEVER	EA	-	1	-	-	1
754	1314	OVERHEAD SIGN STR 29FT CANTILEVER	EA	-	1	-	-	1
754	1390	REMOVE OVERHEAD SIGN STR CANTILEVER	EA	-	2	-	-	2
754	1590	REMOVE OVERHEAD SIGN STR TRUSS	EA	-	1	-	-	1
754	1599	REVISE OVERHEAD SIGN STR TRUSS	EA	-	2	-	-	2
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	829	880	-	-	1,709
762	0420	SHORT TERM 4IN LINE-TYPE R	LF	1,585	-	-	-	1,585
762	0424	SHORT TERM 8IN LINE-TYPE R	LF	6,345	-	-	-	6,345
762	0425	SHORT TERM 16IN LINE-TYPE R	LF	650	-	-	-	650
762	0440	SHORT TERM MESSAGE-TYPE R	SF	1,329	-	-	-	1,329
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	3,116	17,616	-	-	20,732
762	1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED	LF	2,408	171	-	-	2,579
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	8,748	9,774	-	-	18,522
762	1317	PREFORMED PATTERNED PVMT MK 16IN LINE-GROOVED	LF	621	-	-	-	621
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	-	488	-	-	488
762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF	2,848	2,180	-	-	5,028
764	0131	W-BEAM GUARDRAIL	LF	-	104	-	-	104
764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	-	2	-	-	2
764	0151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	-	104	-	-	104

32nd Avenue South

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	8	6

IM-8-029(166)062

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-8-984(152)155	IM-8-029(166)062	IM-8-029(166)062 Drainage	City of Fargo	TOTAL
764	2081	REMOVE END TREATMENT & TRANSITION	EA	-	2	-	-	2
764	9010	ATTENUATING CRASH CUSHION TL-2	EA	-	4	-	-	4
764	9030	REMOVE ATTENUATING CRASH CUSHION TL-2	EA	-	5	-	-	5
764	9035	REMOVE ATTENUATING CRASH CUSHION TL-3	EA	-	2	-	-	2
766	0100	MAILBOX-ALL TYPES	EA	5	-	-	-	5
770	0003	LIGHTING SYSTEM A	EA	1	-	-	-	1
770	0004	LIGHTING SYSTEM B	EA	-	1	-	-	1
770	4525	REVISE LIGHTING SYSTEM	EA	-	1	-	-	1
772	0450	INTERCONNECT CABLE	LF	-	1,128	-	-	1,128
772	2800	INTERIM TRAFFIC SIGNALS	EA	3	3	-	-	6
772	3125	REMOVE TRAFFIC SIGNAL SYSTEM	EA	-	3	-	-	3
772	9200	IT SYSTEM	EA	-	1	-	-	1
772	9201	IT SYSTEM A	EA	1	-	-	-	1
772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	-	1	-	-	1
772	9812	TRAFFIC SIGNAL SYSTEM - SITE 2	EA	-	1	-	-	1
772	9813	TRAFFIC SIGNAL SYSTEM - SITE 3	EA	-	1	-	-	1
772	9814	TRAFFIC SIGNAL SYSTEM - SITE 4	EA	1	-	-	-	1
772	9815	TRAFFIC SIGNAL SYSTEM - SITE 5	EA	1	-	-	-	1
772	9816	TRAFFIC SIGNAL SYSTEM - SITE 6	EA	1	-	-	-	1
806	0300	GROUT	CF	-	-	360	-	360
930	3000	BRIDGE BENCH MARKS	SET	-	1	-	-	1
930	7012	ROADWAY CANOPY	L SUM	-	1	-	-	1
930	8670	CONCRETE SLEEPER SLAB	EA	-	4	-	-	4
930	8700	3 IN EXPANSION JOINT	LF	-	216	-	-	216
930	9537	ABUTMENT UNDERDRAIN SYSTEM	EA	-	2	-	-	2
930	9551	CONCRETE MODULAR BLOCK RETAINING WALL	SF	-	1,099	-	-	1,099
930	9612	SPALL REPAIR	SF	-	16	-	-	16
970	0001	LANDSCAPING APPURTENANCES	L SUM	-	1	-	-	1
970	1011	LANDSCAPE PLANTINGS	L SUM	1	-	-	-	1
970	1025	REPLANT TREES	EA	-	51	-	-	51
970	2032	AUTUMN SPLENDOR BUCKEYE	EA	11	-	-	-	11
970	2045	AMUR CHOKECHERRY	EA	7	-	-	-	7
970	2050	COMMON HACKBERRY	EA	18	-	-	-	18
970	2150	NORTHERN ACCLAIM HONEYLOCUST	EA	17	-	-	-	17
970	2202	SPRING SNOW CRABAPPLE	EA	9	-	-	-	9
970	2330	BUR OAK	EA	11	-	-	-	11
970	2392	IVORY SILK LILAC	EA	3	-	-	-	3
970	2436	HARVEST GOLD LINDEN	EA	20	-	-	-	20
970	2449	ACCOLADE ELM	EA	12	-	-	-	12
970	2472	PRINCETON ELM	EA	15	-	-	-	15
980	0816	VERTICAL ROAD CLOSURE GATE-40FT	EA	-	1	-	-	1
980	0820	REMOVE ROAD CLOSURE GATE	EA	-	1	-	-	1

32nd Avenue South

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155 IM-8-029(166)062	10	1

BASIS OF ESTIMATE

Materials

Salvaged Base Course	1.875 TON/CY
Commercial Grade Hot Mix Asphalt	2.0 TON/CY
PG 58-28 Asphalt Cement*	6.0% of Commercial Grade Hot Mix Asphalt
SS1H or CSS1H or MS1 Emulsified Asphalt*	0.05 GAL/SY

*To be included in the price bid for “Commercial Grade Hot Mix Asphalt”

Removal of Pavement:

Concrete Pavements	2.0 TON/CY
Bituminous Pavement	2.0 TON/CY
Aggregate Base	1.875 TON/CY

Water

Embankment	10 GAL/CY
Salvaged Base Course	20 GAL/CY
Dust Palliative	150 MGAL/Mile

PROJECT SU-8-984(152)155: SUBGRADE PREPARATION-TYPE A-12IN

LOCATION	230 0165 SUBGRADE PREPARATION-TYPE A-12IN PAY ITEM	
	(SY)	STA
32ND AVE S (WEST OF INTERCHANGE)		
Sta 92+78 to Sta 115+75	17,361	22.97
39TH STREET SOUTH		
Sta 3904+95 to Sta 3911+52	4,203	6.57
32ND AVE S (EAST OF INTERCHANGE)	17,283	
Sta 138+95 to Sta 155+88		16.93
TOTAL:	**38,847**	**46.47**

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	11	1

SALVAGED BASE COURSE SUMMARY - PROJECT SU-8-984(152)155

LOCATION	202 0136 REMOVAL OF PAVEMENT (TON) PAY ITEM						LOCATION	302 0101 SALVAGED BASE COURSE REQUIRED (CY) PAY ITEM
	REMOVAL OF AGGREGATE		REMOVAL OF HBP & CONCRETE		TOTAL			
	(TON)	A (CY)	(TON)	B (CY)	(TON)	C=A+B (CY)		(CY)
32ND AVE S (WEST OF INTERCHANGE)							**32ND AVE S (WEST OF INTERCHANGE)**	
Sta 92+78 to 98+00	1,009	538	1,251	626	2,260	1,164	Sta 92+78 to 96+50	732
Sta 98+00 to 104+00	1,554	829	2,105	1,053	3,659	1,882	Sta 96+50 to 100+50	1,116
Sta 104+00 to 110+00	1,492	796	2,069	1,035	3,561	1,831	Sta 100+50 to 104+50	1,176
Sta 110+00 to 115+75	2,296	1,225	2,782	1,391	5,078	2,616	Sta 104+50 to 108+50	1,304
							Sta 108+50 to 112+50	1,097
							Sta 112+50 to 115+75	1,187
42ND ST S (WEST OF INTERCHANGE)								
Sta 502+98 to 506+96	384	205	430	215	814	420	Sta 502+98 to 506+96	395
39TH ST S (WEST OF INTERCHANGE)								
Sta 3904+95 to 3910+00	1,891	1,009	2,063	1,032	3,954	2,041	Sta 3904+95 to 3908+00	700
							Sta 3908+00 to 3910+95	943
32ND AVE S (EAST OF INTERCHANGE)							**32ND AVE S (WEST OF INTERCHANGE)**	
Sta 138+95 to 143+00	1,749	933	1,711	856	3,460	1,789	Sta 138+95 to 143+00	1,699
Sta 143+00 to 149+00	2,892	1,542	2,887	1,444	5,779	2,986	Sta 143+00 to 147+00	1,718
Sta 149+00 to 157+72	2,364	1,261	2,270	1,135	4,634	2,396	Sta 147+00 to 151+00	1,578
							Sta 151+00 to 155+00	1,282
							Sta 155+00 to 157+72	146
TOTAL		**8,338**		**8,787**		**17,125**		**15,073**
95% TOTAL		7,921		8,348		16,269		

Notes:

1. This is not a balance sheet. The contractor shall calculate their own balance of materials.
2. It is assumed 95% of "Removal of Pavement" quantities can be reclaimed after the crushing process.
3. The basis for "Removal of Pavement" and "Salvaged Base Course" is 1.875 Ton/CY for Aggregate and 2.0 Ton/CY for Concrete and HBP

Data Tables

Salvaged Base Course Summary

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	11	2

SALVAGED BASE COURSE SUMMARY - PROJECT IM-8-029(166)062

Location	202-0136 REMOVAL OF PAVEMENT PAY ITEM					
	REMOVAL OF AGGREGATE		REMOVAL OF HMA & CONCRETE		TOTAL	
	A		B		C = A + B	
	(TON)	(CY)	(TON)	(CY)	(TON)	(CY)
32nd Ave - Sta 115+75 to 119+00	951	507	1,401	701	2,352	1,208
32nd Ave - Sta 119+00 to 125+00 NW Ramp - Sta 14+00 to 32nd Ave SW Ramp - 32nd Ave to Sta 2+00	1,523	812	2,046	1,023	3,569	1,835
32nd Ave - Sta 125+00 to 131+00	795	424	1,182	591	1,977	1,015
32nd Ave - Sta 131+00 to 137+00 SE Loop - 32nd Ave to Sta 4+35.20 NE Ramp - 32nd Ave to Sta 2+50	1,022	545	1,638	819	2,660	1,364
32nd Ave - Sta 137+00 to 138+95 36th Street (South of 32nd Ave) - Sta 16+00 to 32nd Ave 36th Street (North of 32nd Ave) - Sta 14+00 to 32nd Ave	914	487	912	456	1,826	943
SW Ramp - Sta 8+00 to 13+38.30	723	386	771	386	1,494	771
SW Ramp - Sta 2+00 to 8+00	1,149	613	1,294	647	2,443	1,260
NW Ramp - Sta 6+00 to 14+00	1,034	551	1,065	533	2,099	1,084
36th Street (South of 32nd Ave) - Sta 10+00 to 13+00	588	314	550	275	1,138	589
36th Street (South of 32nd Ave) - Sta 13+00 to 16+00	891	475	805	403	1,696	878
36th Street (North of 32nd Ave) - Sta 12+22.60 to 14+00	296	158	286	143	582	301
TOTAL		5,273		5,975		11,248
95% TOTAL		5,009		5,676		10,685

Location	302-0101 SALVAGED BASE COURSE PAY ITEM
	A
	(CY)
32nd Ave - Sta 115+75 to 119+00	941
32nd Ave - Sta 119+00 to 125+00 NW Ramp - Sta 14+00 to 32nd Ave SW Ramp - 32nd Ave to Sta 2+00	2,041
32nd Ave - Sta 125+00 to 131+00	647
32nd Ave - Sta 131+00 to 137+00 SE Loop - 32nd Ave to Sta 4+35.20 NE Ramp - 32nd Ave to Sta 2+50	1,461
32nd Ave - Sta 137+00 to 138+95 36th Street (South of 32nd Ave) - Sta 16+00 to 32nd Ave 36th Street (North of 32nd Ave) - Sta 14+00 to 32nd Ave	903
SW Ramp - Sta 8+00 to 13+38.30	562
SW Ramp - Sta 2+00 to 8+00 SW Loop - Sta 11+22.10 to 20+43	2,022
NW Ramp - Sta 6+00 to 14+00	454
36th Street (South of 32nd Ave) - Sta 10+00 to 13+00	512
36th Street (South of 32nd Ave) - Sta 13+00 to 16+00	900
36th Street (North of 32nd Ave) - Sta 12+22.60 to 14+00	217
TOTAL	10,660

NOTES:

1. This computation report is not a balance sheet. The Contractor shall calculate his own balance of materials.
2. It is assumed 95% of "REMOVAL OF PAVEMENT" quantities can be reclaimed after the crushing process.
3. The basis for "REMOVAL OF PAVEMENT" and "SALVAGED BASE COURSE" 1.875 Ton/CY for HMA & Aggregate and 2.00 Ton/CY for Concrete.

Data Tables

Salvaged Base Course Summary

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	11	3

EARTHWORK SUMMARY - PROJECT SU-8-984(152)155

LOCATION	203 0101 COMMON EXCAVATION - TYPE A (CY) PAY ITEM	EMBANKMENT (CY)	EXCESS EXCAVATION (CY)
	A	B	C = A - B
City Portion - 32nd Avenue West (Widening)			
Sta 92+78 - 115+75	4,973	1,865	3,108
City Portion - 39th Street (Reconstruction)			
Sta 3904+95 to 3910+69	1,067	277	790
City Portion - 32nd Avenue East (Reconstruction)			
Sta 138+95 - 157+72	3,739	1,627	2,113
TOTALS	**9,779**	**3,769**	**6,010**

NOTES:

1. THIS COMPUTATION REPORT IS NOT A BALANCE SHEET. THE CONTRACTOR SHALL CALCULATE ITS OWN BALANCE OF MATERIALS.
2. AN ADDITIONAL VOLUME OF 25% TO ALLOW FOR SHRINKAGE IS INCLUDED IN ALL EMBANKMENT VOLUMES.
3. ALL EXCESS EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL COSTS ASSOCIATED WITH HAULING, DISPOSING OF, OR USING AS EMBANKMENT MATERIAL ON PROJECT IM-8-029(166)062 SHALL BE INCLUDED IN THE PRICE BID FOR "COMMON EXCAVATION-TYPE A".

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Data Tables

Earthwork Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	11	4

EARTHWORK SUMMARY - PROJECT IM-8-029(166)062

Location	203-0101 COMMON EXCAVATION - TYPE A	EMBANKMENT	203-0140 BORROW EXCAVATION
	Pay Item		Pay Item
	(CY)	(CY)	(CY)
	C = A - B	D	E = D - C
32nd Ave - Sta 115+75 to 138+95	5,177	17,253	12,076
36th Street (South of 32nd)	1,167	3,332	2,165
36th Street (North of 32nd)	322	531	209
NW Ramp	2,982	1,180	-1,802
SW Ramp	6,919	18,061	11,142
SW Loop	8,645	8,389	-256
SE Loop	428	446	18
NE Ramp	244	53	-191
Shared Use Path	0	7,759	7,759
TOTAL	25,884	57,004	31,120

NOTES:

1. This computation report is not a balance sheet. The Contractor shall calculate his own balance of materials.
2. An additional volume of 25% to allow for shrinkage is included in all embankment quantities.

This document was originally issued and sealed by Jeffrey R. Rensch, Registration Number PE- 8211, on 11/30/16 and the original document is stored at the North Dakota Department of Transportation

Data Tables

Earthwork Summary

TOPSOIL SUMMARY

LOCATION	TOPSOIL REMOVED		TOPSOIL REQUIRED	BALANCE
	203 0109 TOPSOIL (CY) BID ITEM	203 0121 TOPSOIL-WETLAND (CY) BID ITEM	TOPSOIL (CY)	EXCESS TOPSOIL TO BE SPREAD EVENLY (CY)
	A		B	C = A - B
PROJECT: SU-8-984(152)155				
32ND AVE S (West of Interchange): Sta 92+78 to Sta 115+75	1,485		1,071	414
39TH ST S (West of Interchange): Sta 3904+95 to Sta 3910+69	297		306	-9
32ND AVE S (East of Interchange): Sta 138+95 to Sta 157+72	894		554	340
PROJECT: IM-8-029(166)062				
32ND AVE S (Interchange and Ramps): Sta 115+75 to Sta 138+95	19,554		18,070	1,484
Wetlands		364	364	0
TOTAL	**22,230**	**364**	**20,365**	**2,229**

Notes:

1. TOPSOIL quantities are based on a 4" removal and placement depth within the grading limits on project SU-8-984(152)155.
2. TOPSOIL quantities are based on a 6" removal and placement depth within the grading limits on project IM-8-029(166)062.
3. TOPSOIL-WETLAND quantity based on a 6" removal depth over the permanent impact areas within the grading limits.

Data Tables

Topsoil Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	1

43rd St S
42nd St S
41st St S
39th St S
32nd Ave S
32nd Ave S
110-16
110-18
110-17
110-15
110-14
110-10
110-09
110-08
110-07
110-06
110-04
110-03
110-02
168-04
168-03
168-05
168-06
168-07
168-14
168-08
168-02
169-16
169-15
169-09
169-06
169-05
169-04
169-03
169-02
169-01
2975 Unit A
3001 Unit B
3001 Unit A
3082 Unit A
INTERSTATE
NORTH DAKOTA
29
N
0 150 300
SCALE: 1 INCH = 300 FEET

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General Details

Gate Valve Location Map
(West of Interchange)

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	2

N

0 150 300

SCALE: 1 INCH = 300 FEET

INTERSTATE NORTH DAKOTA 29

36th St S

33rd St S

32nd St S

28th St S

27th St S

32nd Ave S

33rd Ave S

083-21 083-18 083-23 083-16 083-14 083-15 083-04 083-08 083-22 083-07 083-03 083-02 083-01 167-12 167-06 167-07 167-05 167-04 167-03 167-13 082-14 082-10 082-09 166-30 166-44 166-29 166-34 166-33 166-27 166-24 166-28 166-35 166-36 166-40 166-39

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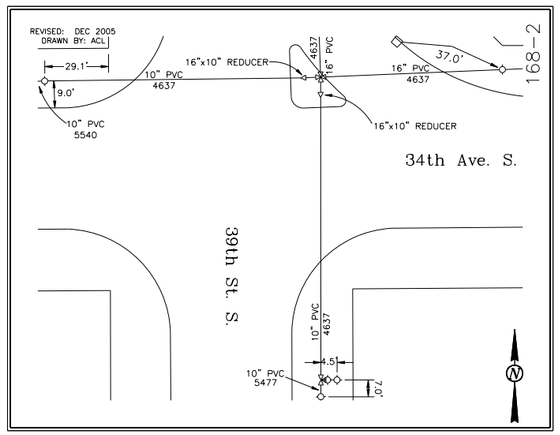
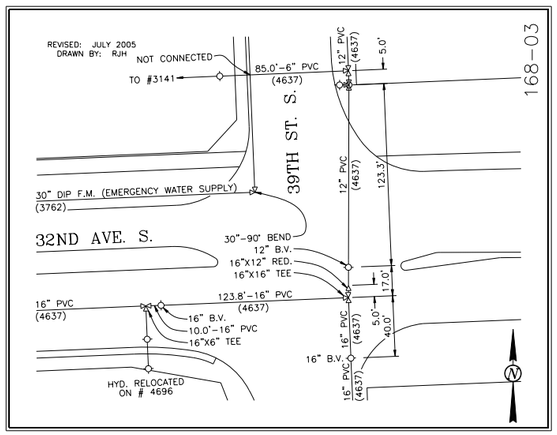
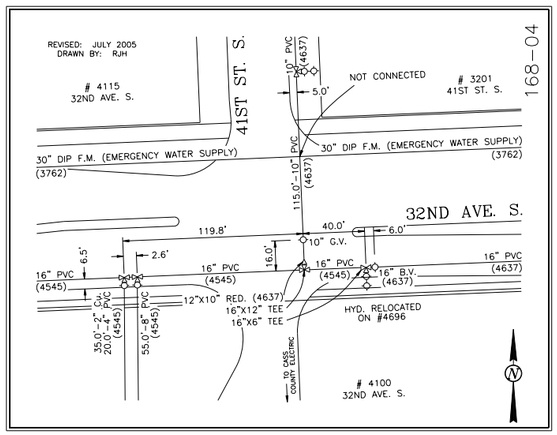
General Details

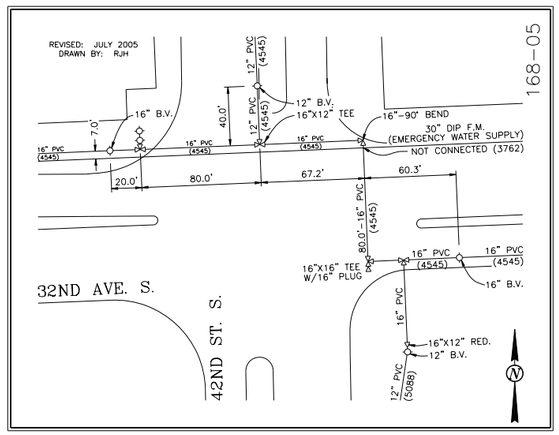
Gate Valve Location Map
(East of Interchange)

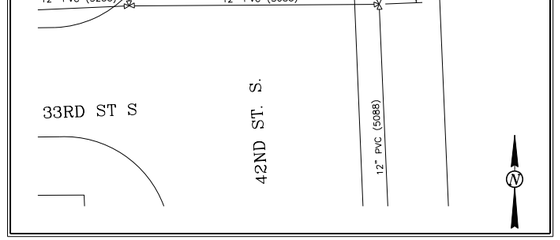
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	3

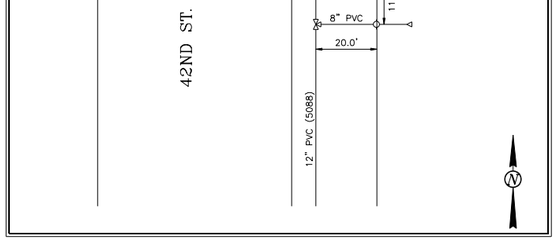


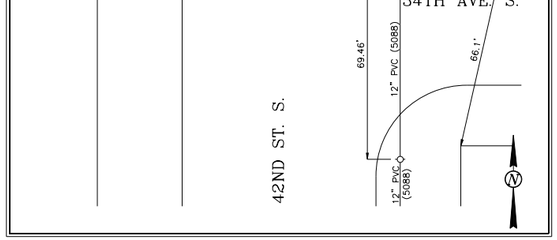


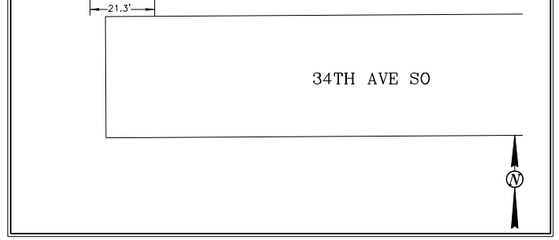


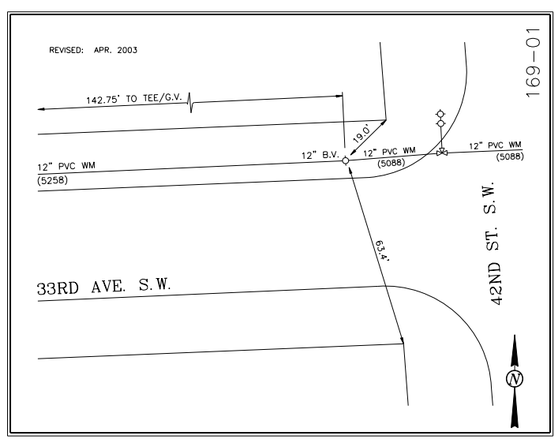


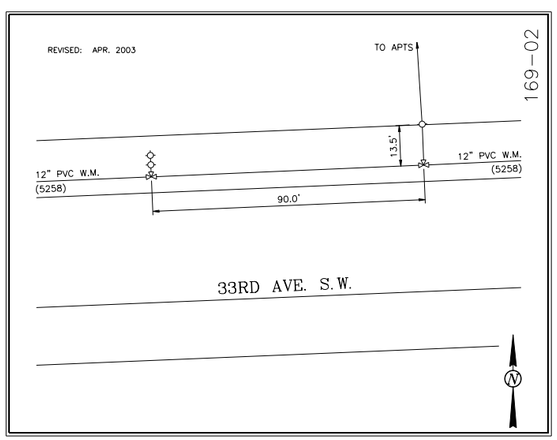


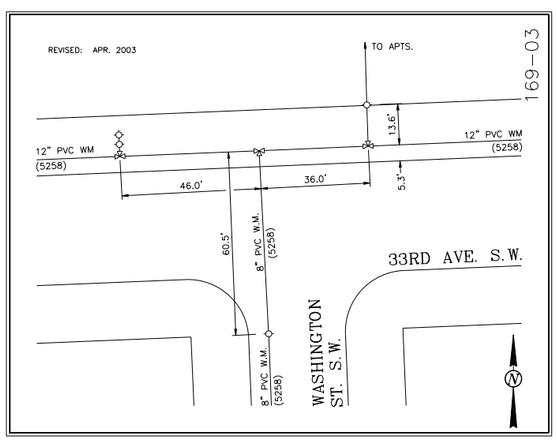












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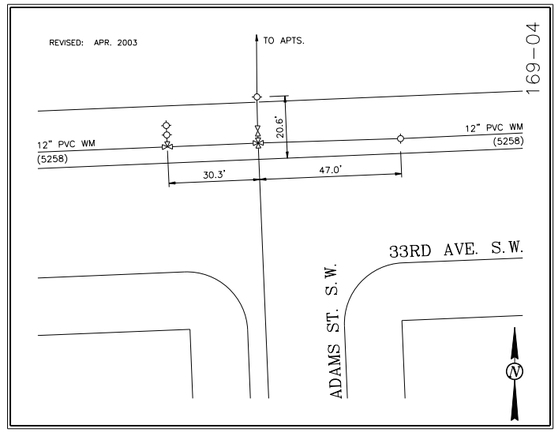
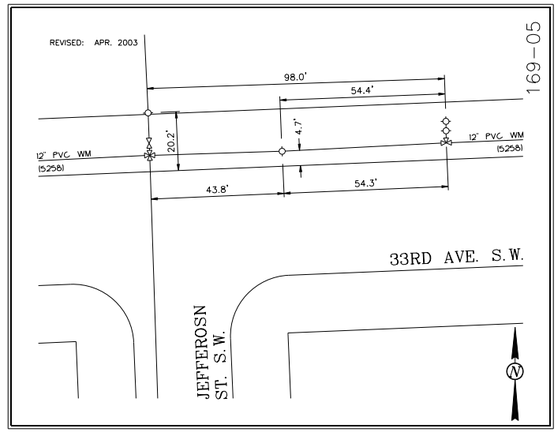
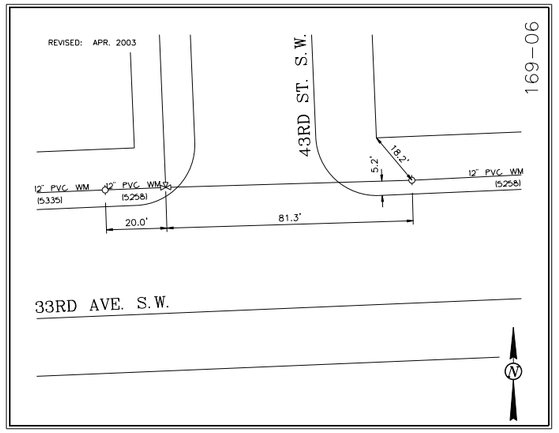
General Details

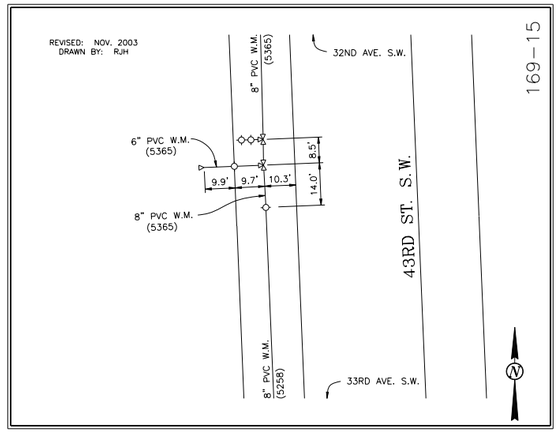
Gate Valve Ties
(West of Interchange)

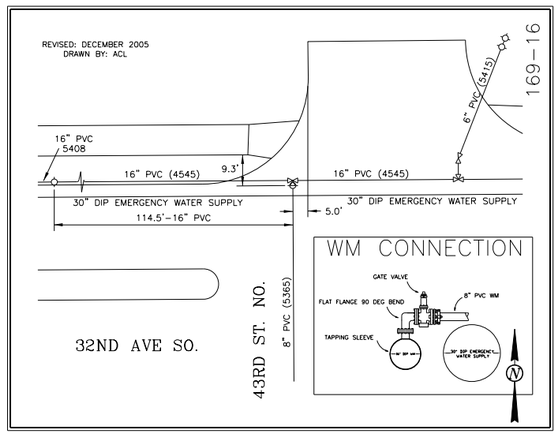
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	4

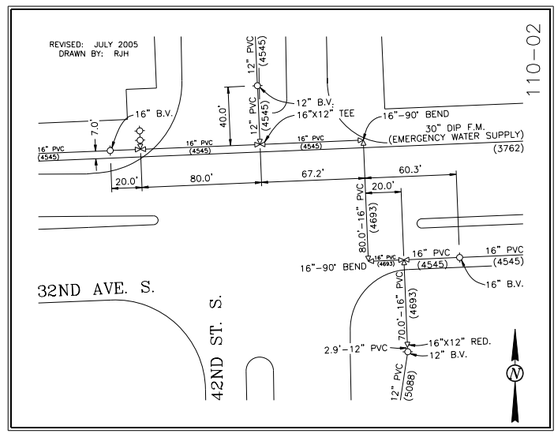


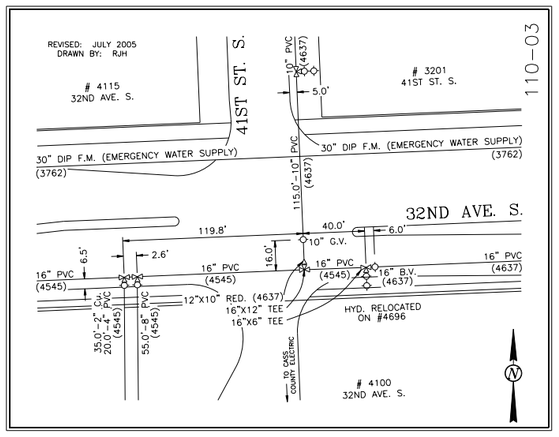


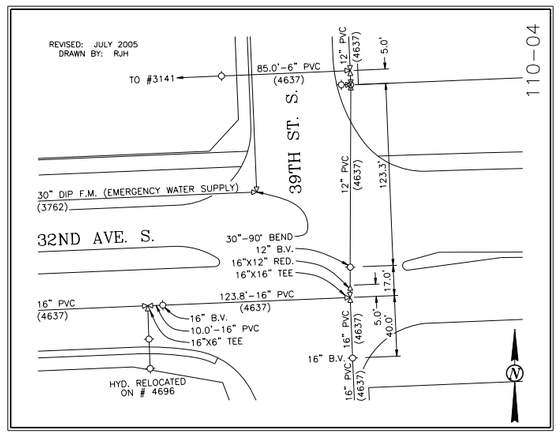


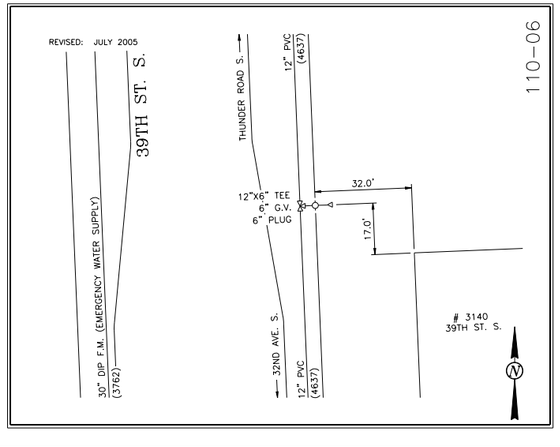


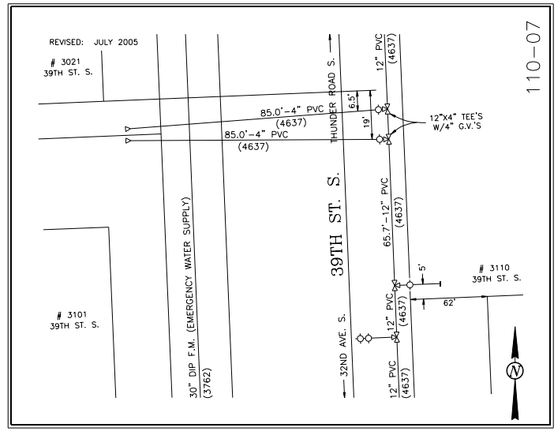


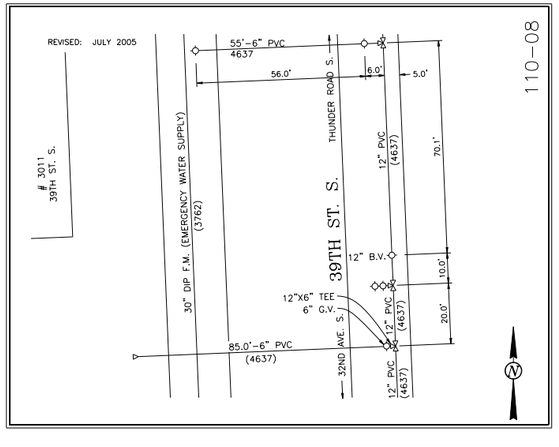












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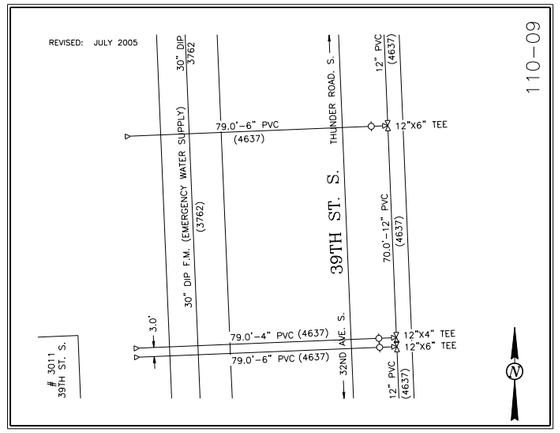
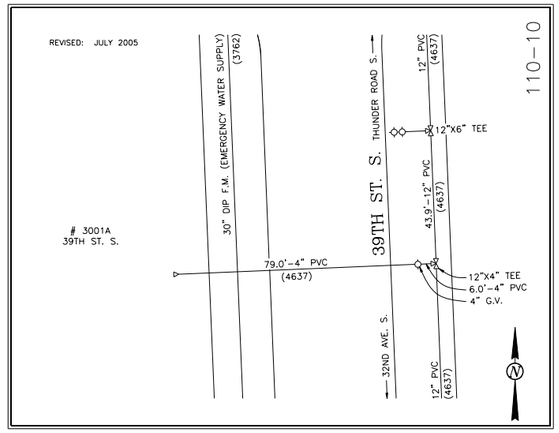
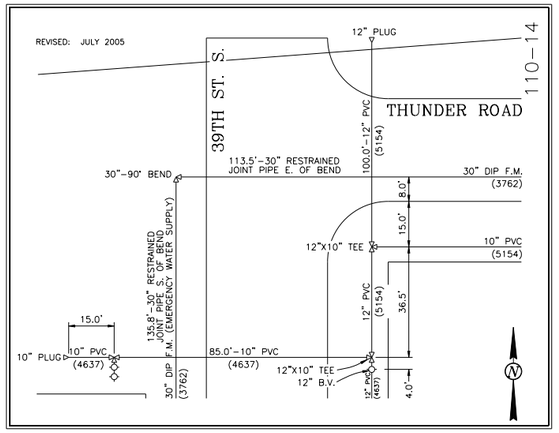
General Details

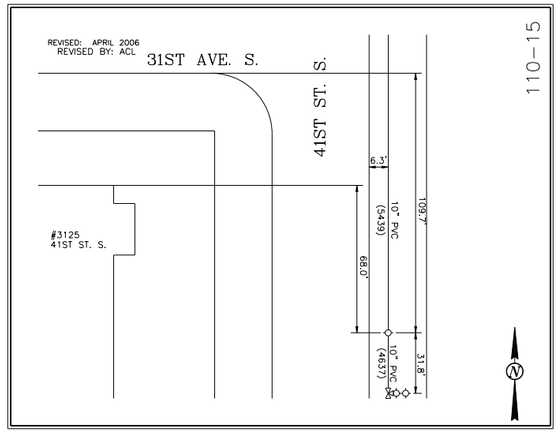
Gate Valve Ties
(West of Interchange)

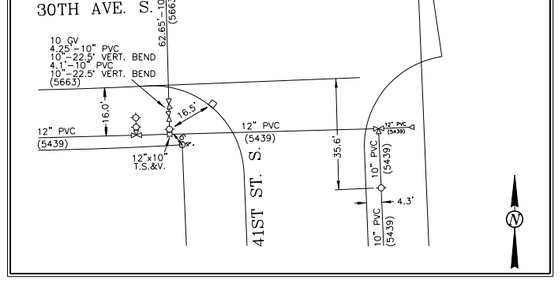
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	5

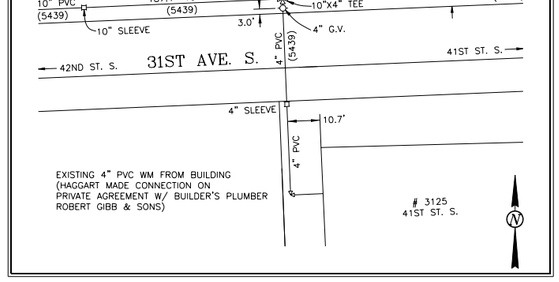


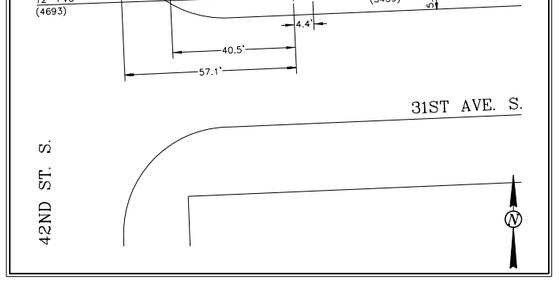












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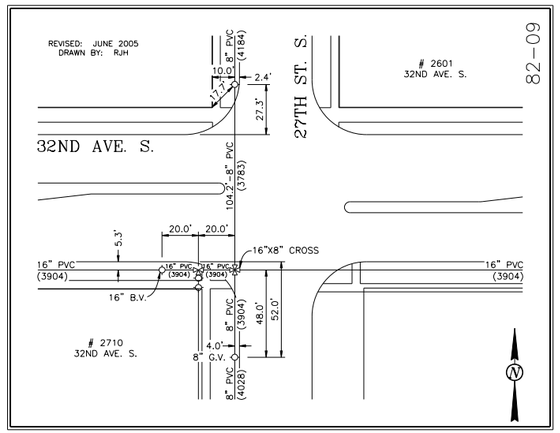
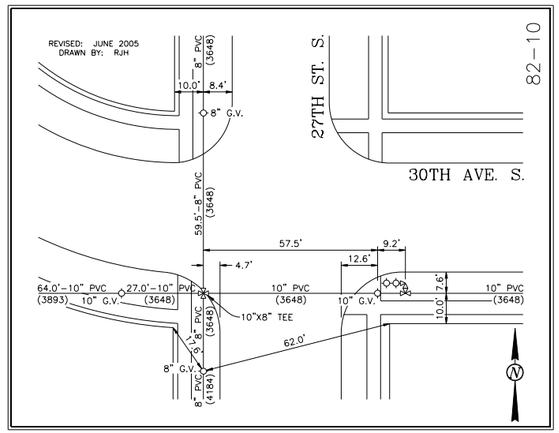
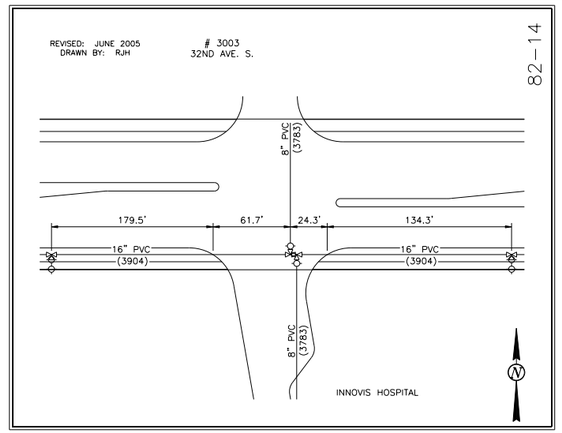
General Details

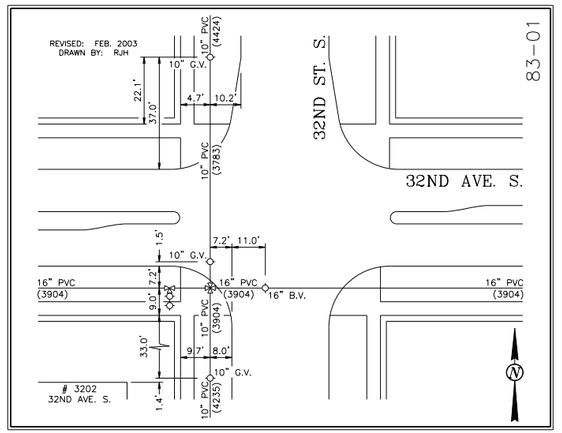
Gate Valve Ties
(West of Interchange)

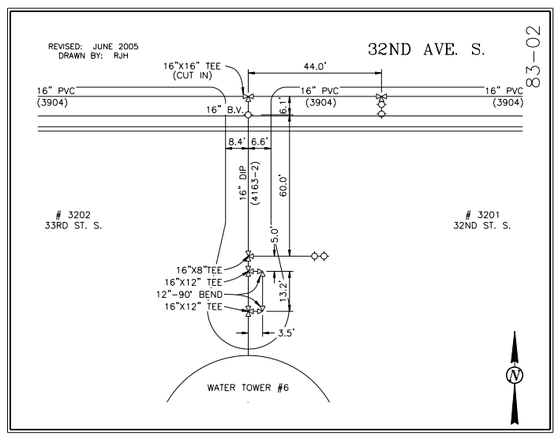
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	6

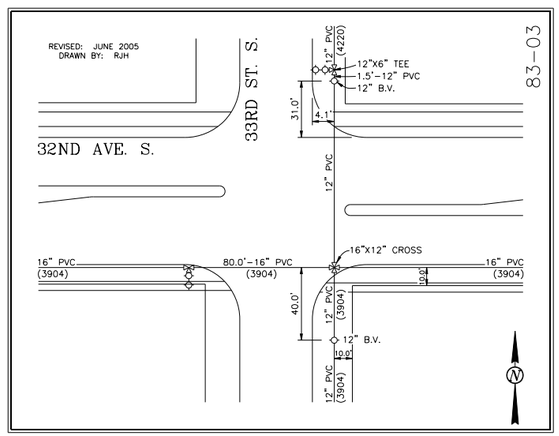


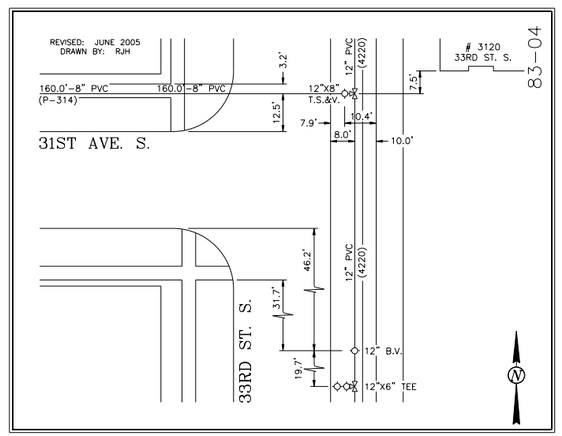


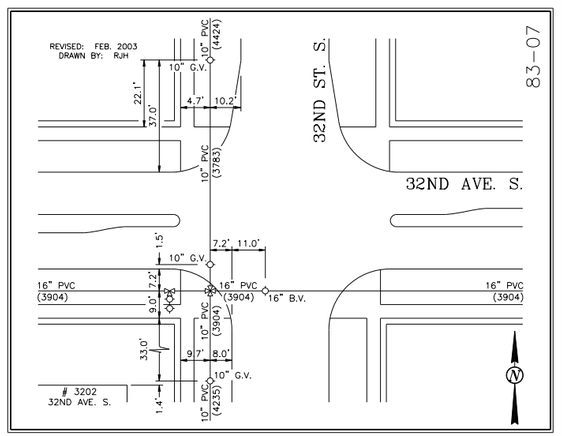


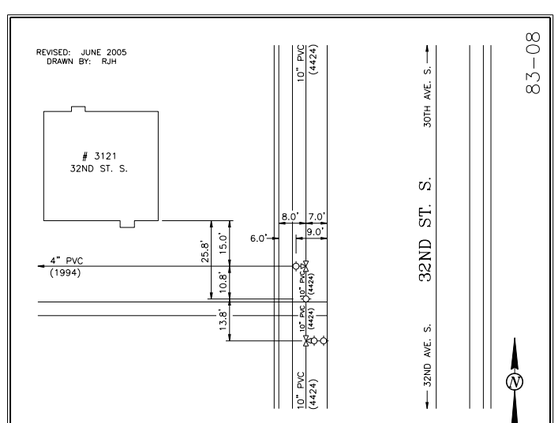


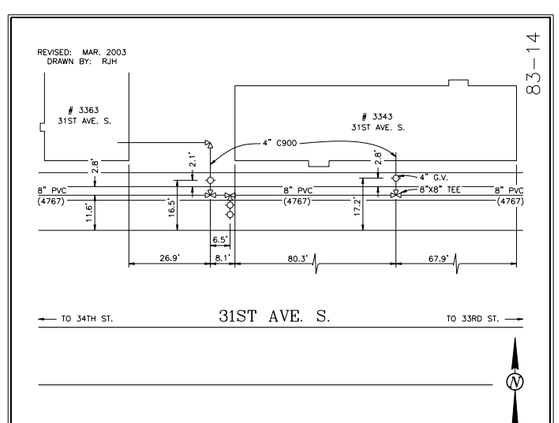


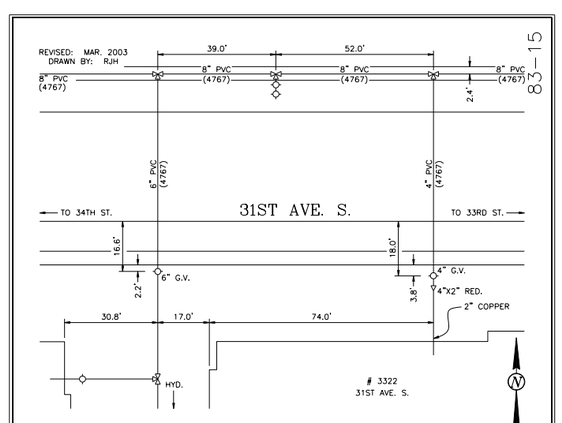












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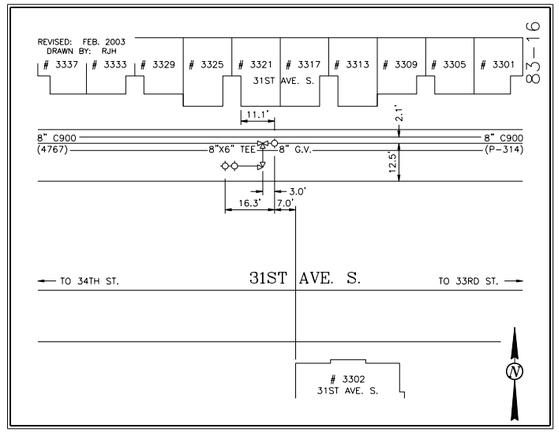
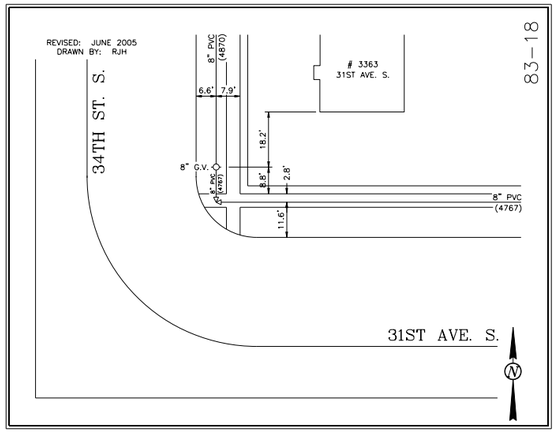
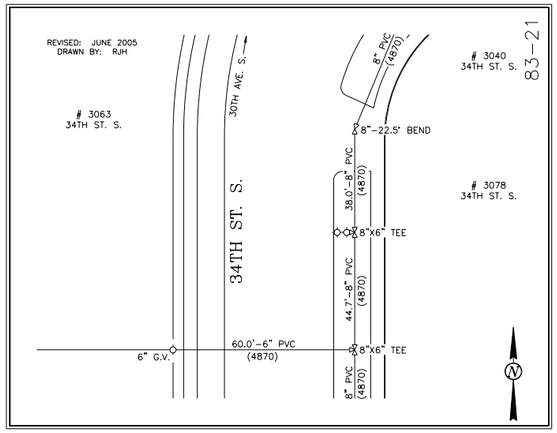
General Details

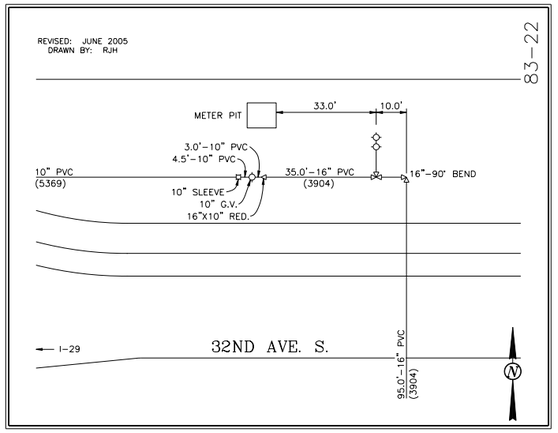
Gate Valve Ties
(East of Interchange)

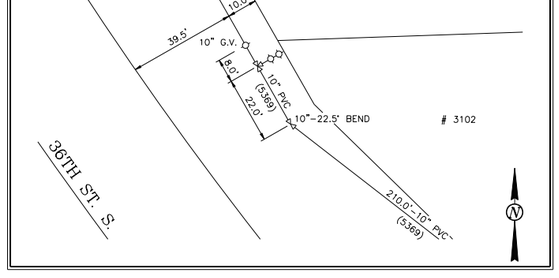
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	7

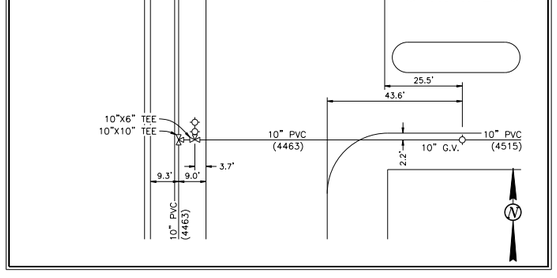


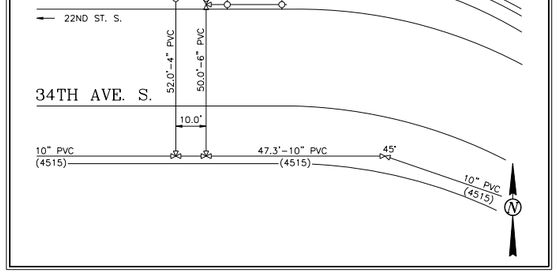


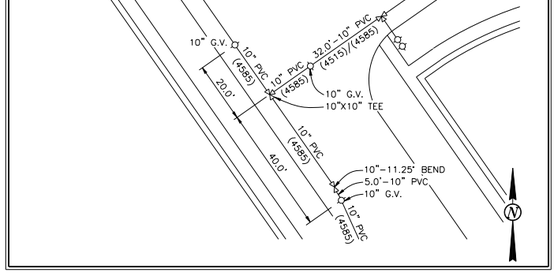


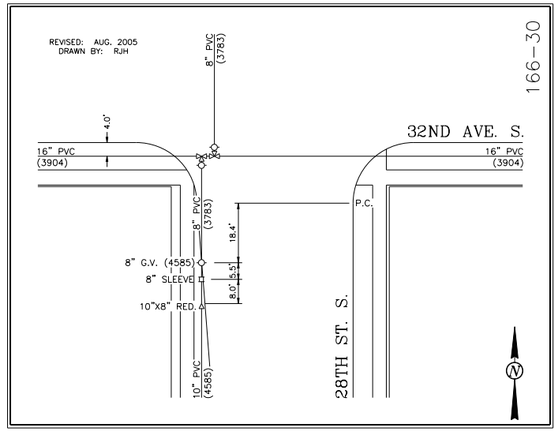


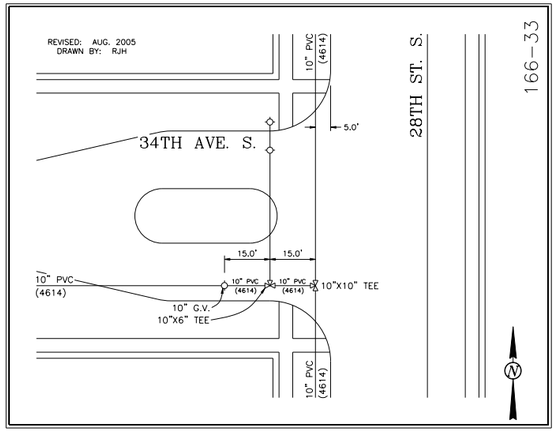


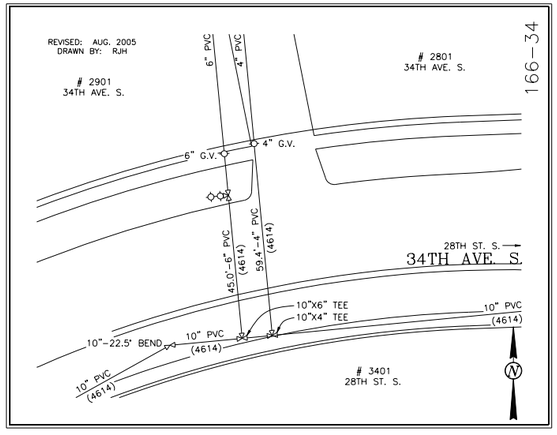












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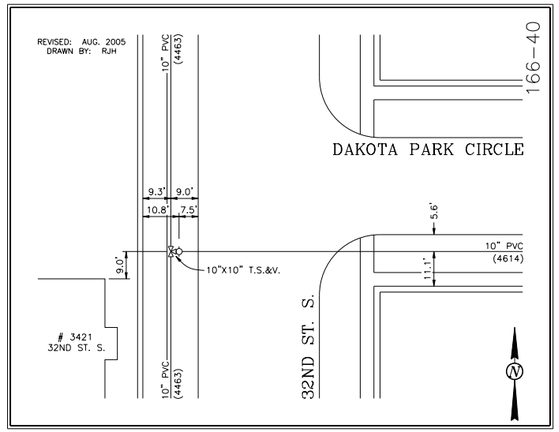
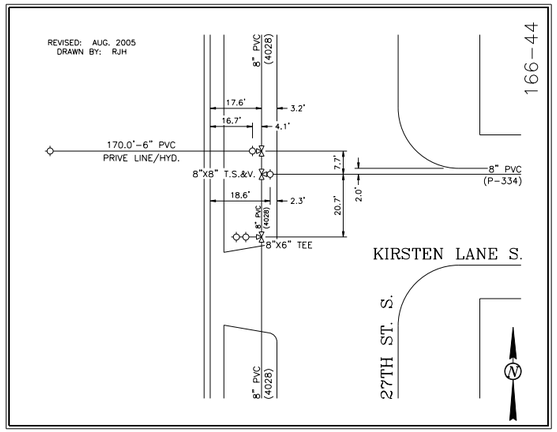
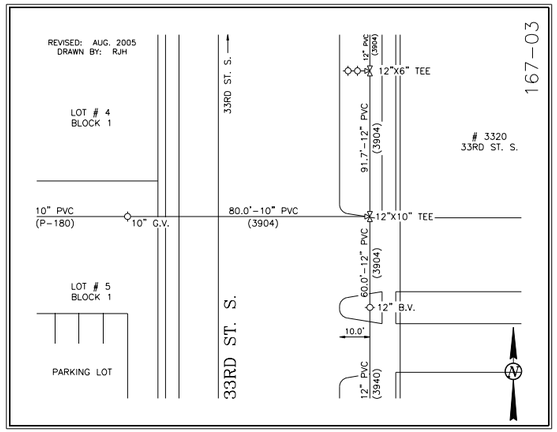
General Details

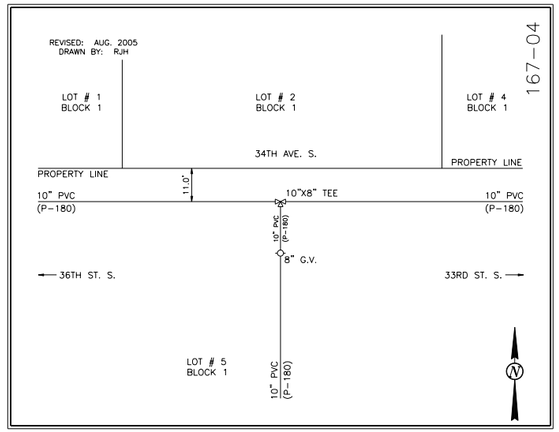
Gate Valve Ties
(East of Interchange)

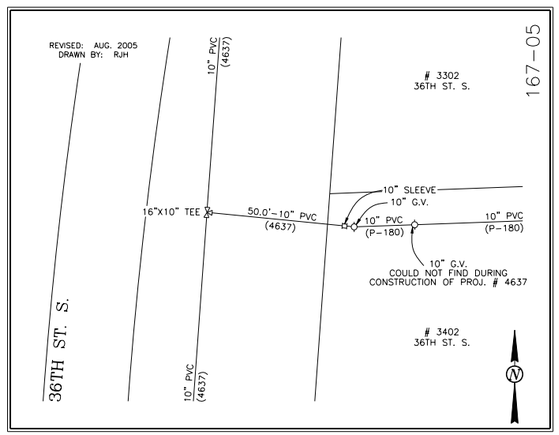
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	8

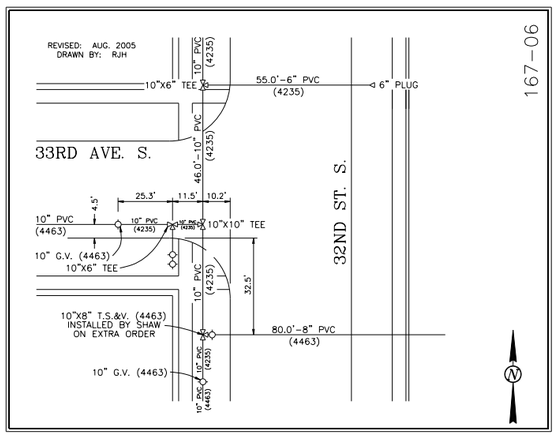


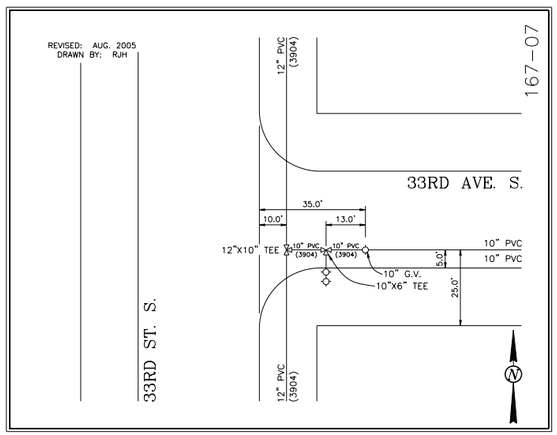


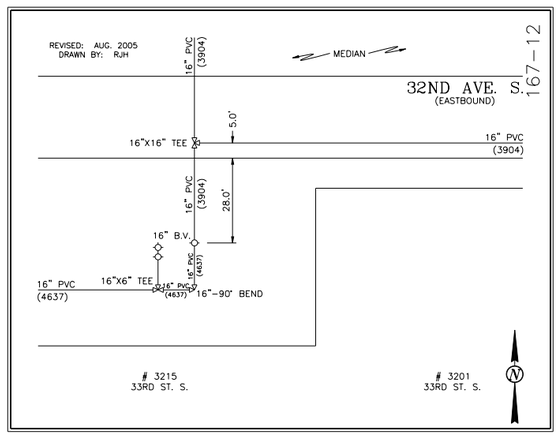


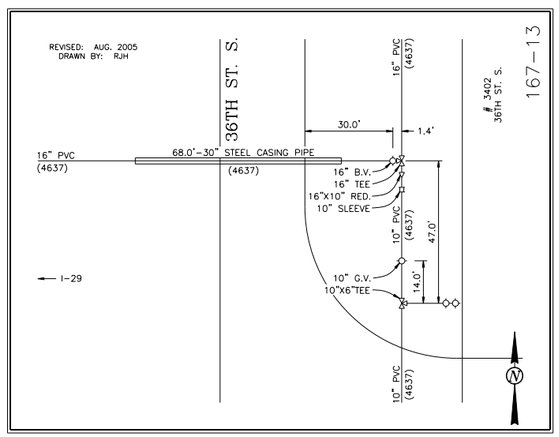












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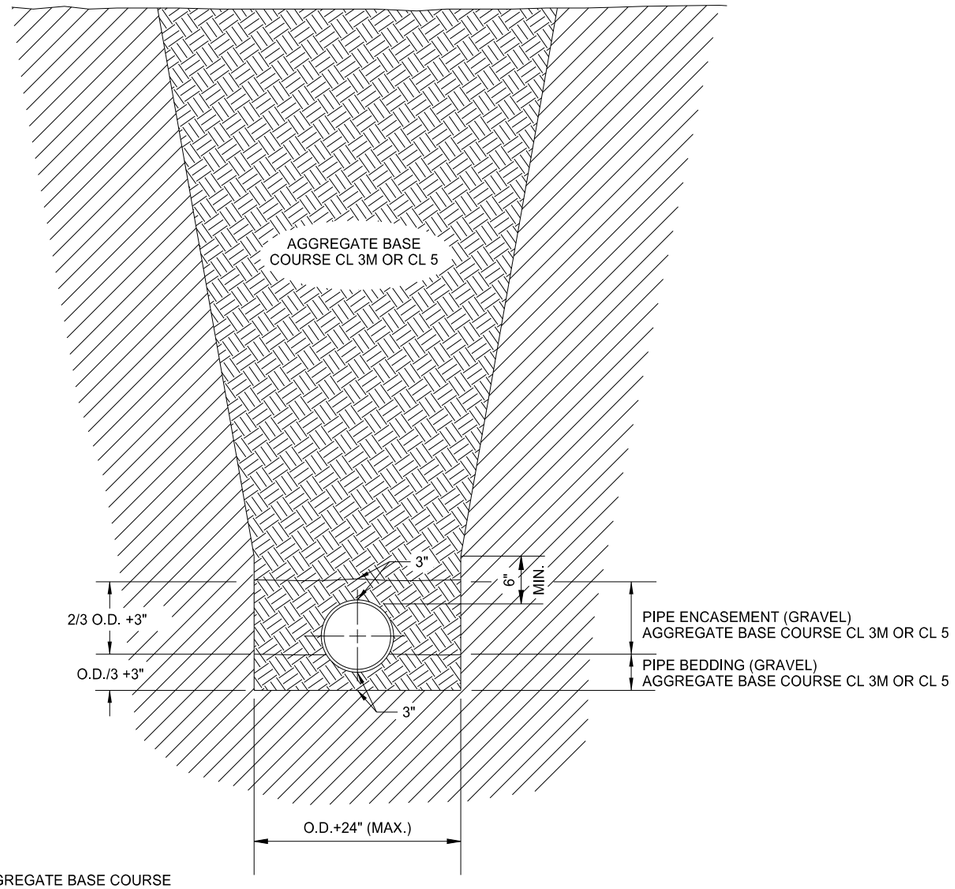
Gate Valve Ties
(East of Interchange)

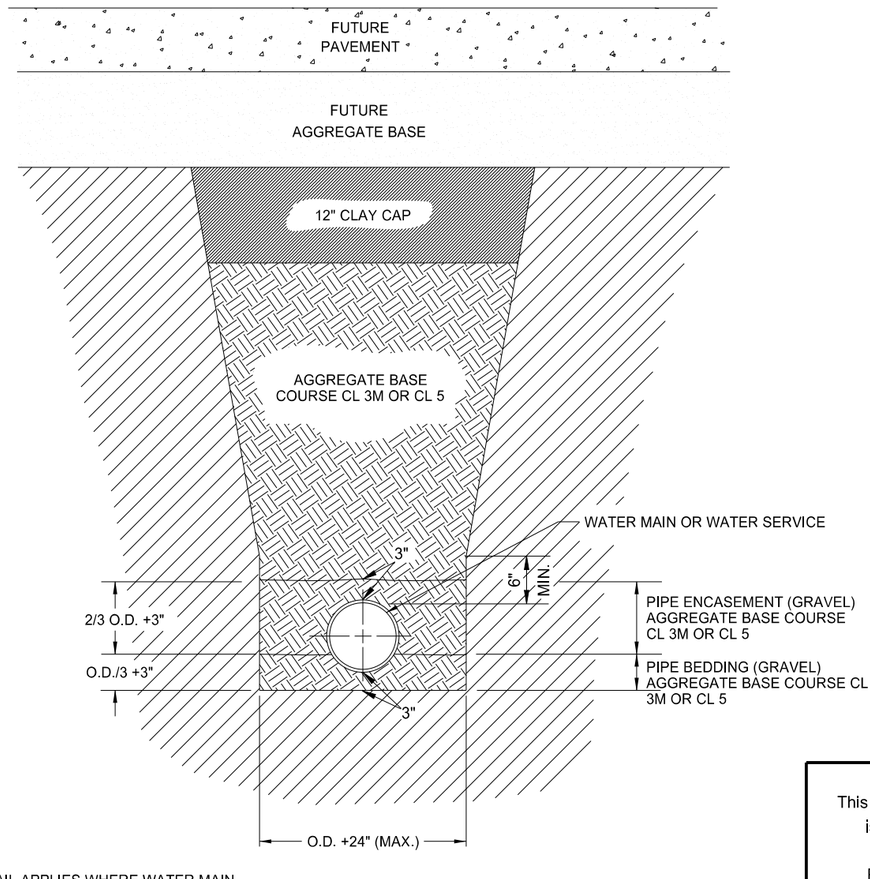
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	9



NOTE:

1. AGGREGATE BASE COURSE CL 3M OR CL 5 PIPE BEDDING, ENCASEMENT, AND BACKFILL SHALL BE INCLUDED IN THE PRICE BID FOR THE WATER MAIN PIPE.

WATER MAIN
TRENCH BACKFILL
(NOT UNDER NEW PAVEMENT)



NOTES:

1. THIS DETAIL APPLIES WHERE WATER MAIN IS INSTALLED UNDER FUTURE PAVING WITH EDGE DRAIN.
2. AGGREGATE BASE COURSE CL 3M OR CL 5 PIPE BEDDING, ENCASEMENT, AND BACKFILL SHALL BE INCLUDED IN THE PRICE BID FOR THE WATER MAIN PIPE.

WATER MAIN TRENCH
UNDER NEW PAVEMENT

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General Details

Water Main Trench Backfill

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	10

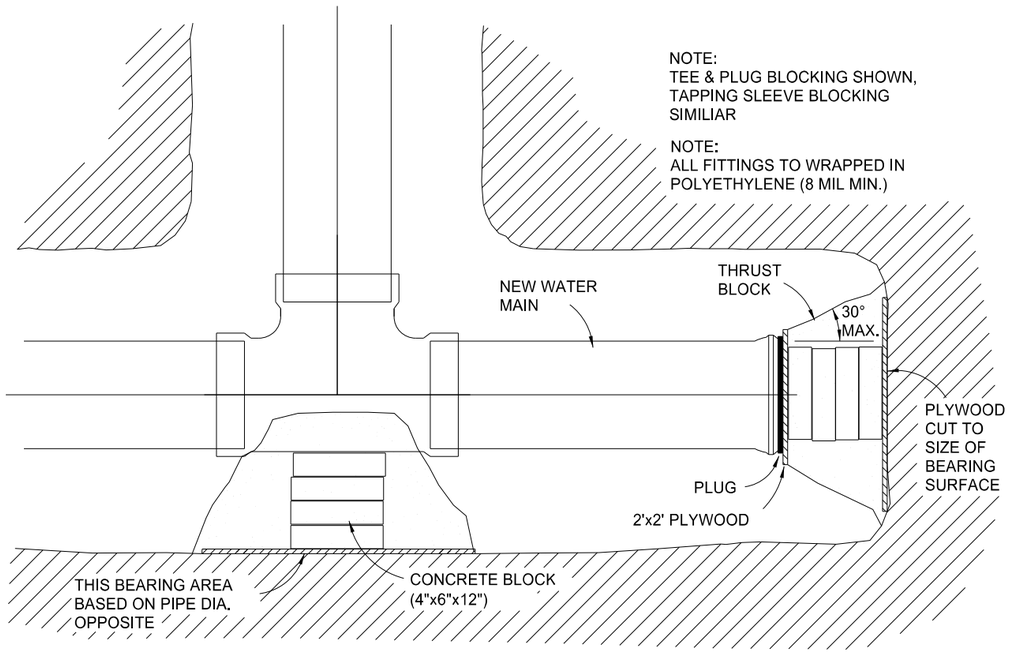


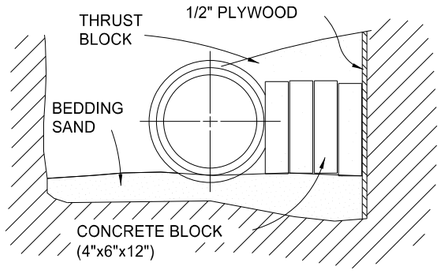
TABLE OF REQUIRED BEARING AREAS

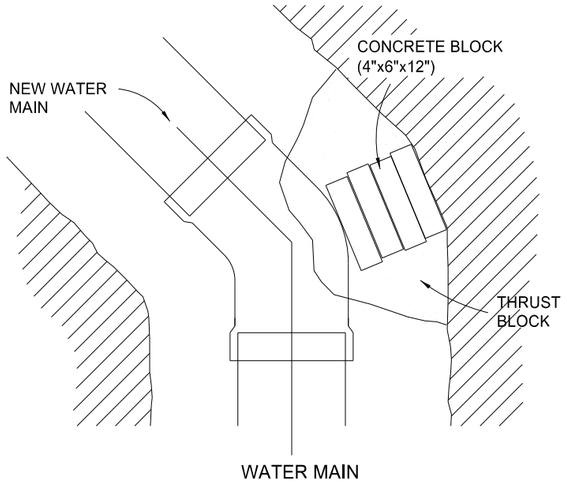
SIZE OF PIPE	90° BEND	45° BEND	22.5°	11.25°	TEE
4"	2' SQ.	2' SQ.	2' SQ.	2' SQ.	2' SQ.
6"	3' SQ.	2' SQ.	2' SQ.	2' SQ.	3' SQ.
8"	5' SQ.	3' SQ.	2' SQ.	2' SQ.	4' SQ.
10"	8' SQ.	4' SQ.	3' SQ.	2' SQ.	6' SQ.
12"	11' SQ.	6' SQ.	3' SQ.	2' SQ.	8' SQ.
16"	20' SQ.	11' SQ.	6' SQ.	4' SQ.	15' SQ.
18"	25' SQ.	14' SQ.	7' SQ.	4' SQ.	18' SQ.

NOTE:

CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH. BELLS AND BOLTS TO BE KEPT FREE OF CONCRETE. CONCRETE IN PLACE TO BE INCLUDED IN PRICE BID FOR WATER MAIN.

IF APPROVED BY THE ENGINEER, SOLID CONCRETE BLOCKS MAY BE USED FOR BLOCKING ON 8" DIA PIPE AND BELOW. 10" DIA. PIPE AND ABOVE WILL CONFORM TO CONCRETE POURED IN PLACE AREAS SHOWN ABOVE.



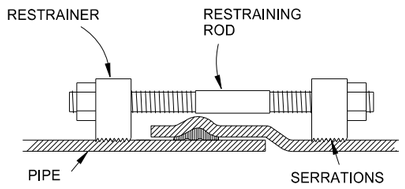


WATER MAIN
THRUST BLOCKING

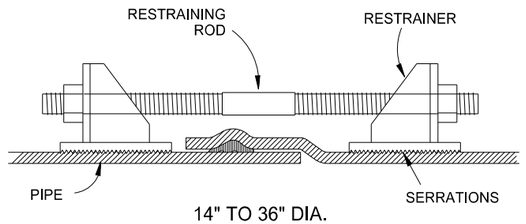
General Details

Water Main Thrust Blocking

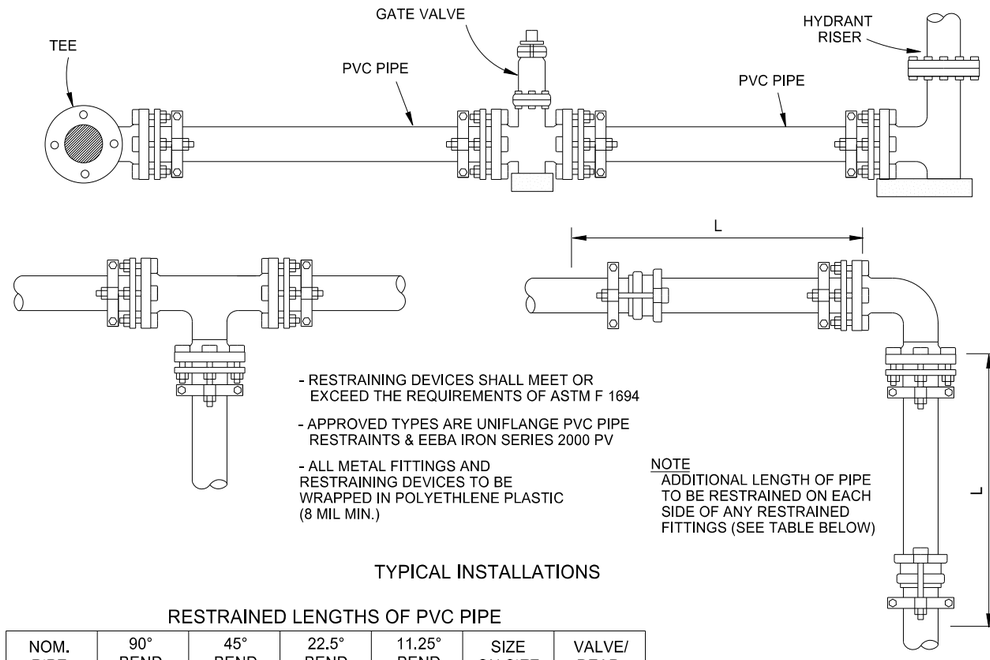
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	11



2" TO 12" DIA.



14" TO 36" DIA.



- RESTRAINING DEVICES SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM F 1694
- APPROVED TYPES ARE UNIFLANGE PVC PIPE RESTRAINTS & EEBA IRON SERIES 2000 PV
- ALL METAL FITTINGS AND RESTRAINING DEVICES TO BE WRAPPED IN POLYETHLENE PLASTIC (8 MIL MIN.)

NOTE
ADDITIONAL LENGTH OF PIPE TO BE RESTRAINED ON EACH SIDE OF ANY RESTRAINED FITTINGS (SEE TABLE BELOW)

TYPICAL INSTALLATIONS

RESTRAINED LENGTHS OF PVC PIPE

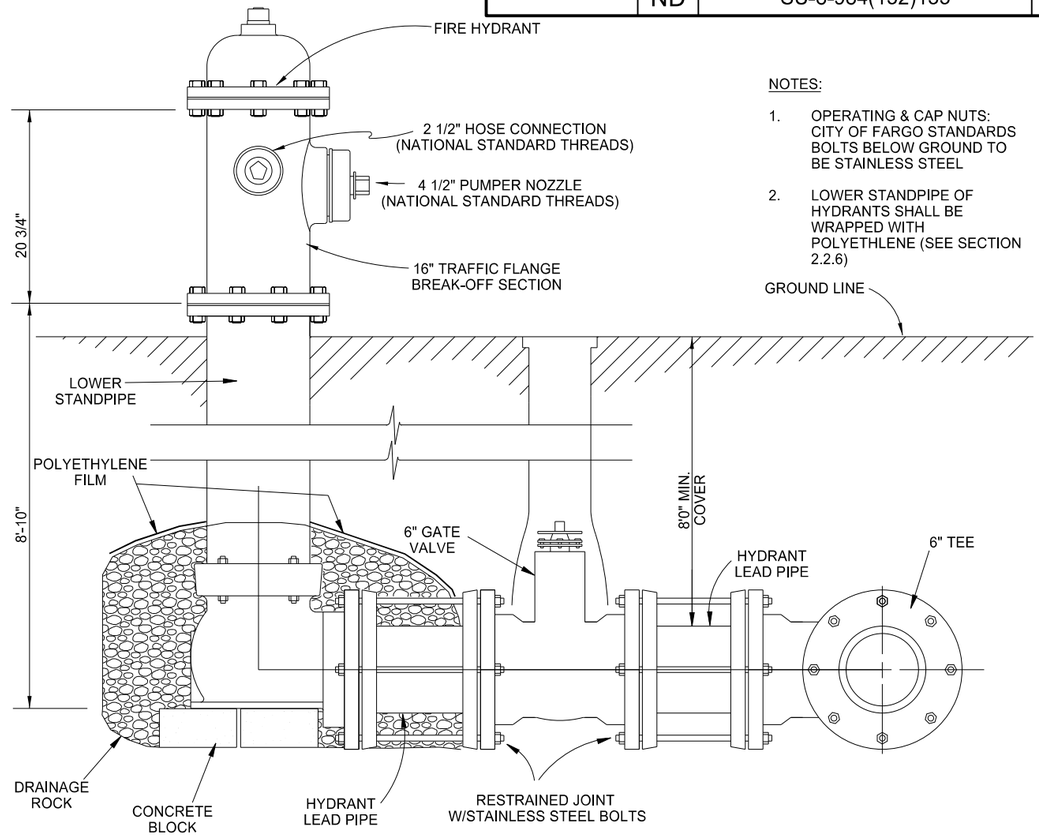
NOM. PIPE SIZE	90° BEND (L)	45° BEND (L)	22.5° BEND (L)	11.25° BEND (L)	SIZE ON SIZE TEE(L)*	VALVE/ DEAD-END(L)
6"	19'	8'	4'	2'	2'	35'
8"	25'	11'	5'	3'	13'	45'
10"	31'	13'	6'	3'	23'	55'
12"	36'	15'	8'	4'	33'	65'
16"	47'	20'	10'	5'	52'	84'

* RECOMMENDED RESTRAINED LENGTHS FOR TEES ARE FOR THE BRANCH OUTLET AND ASSUME A MINIMUM 10 FT. SECTION OF PIPE ATTACHED TO EACH SIDE OF THE RUN. RESTRAINT DEVICES ARE ALSO REQUIRED ON BOTH RUN JOINTS OF THE TEE ITSELF.

SIZE	45° VERT. OFFSET* (L)	22.5° VERT. OFFSET* (L)
6"	15'/8'	7'/4'
8"	19'/11'	9'/5'
10"	23'/13'	11'/6'
12"	27'/15'	13'/8'
16"	35'/20'	17'/10'

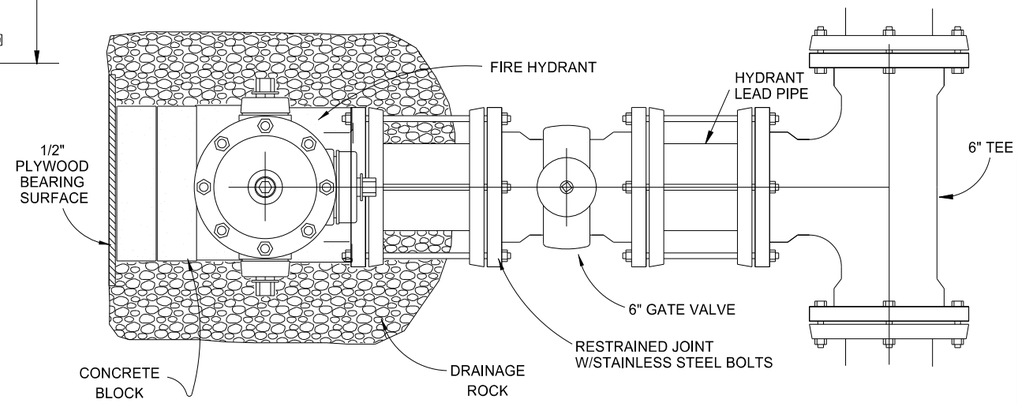
* FIRST NUMBER IS THE RECOMMENDED RESTRAINED LENGTH ON EACH SIDE OF THE DOWN BEND, THE SECOND NUMBER IS THE LENGTH FOR EACH SIDE OF THE UP BEND.

RESTRAINT DEVICE FOR PVC PIPE BELL JOINTS



NOTES:

1. OPERATING & CAP NUTS: CITY OF FARGO STANDARDS BOLTS BELOW GROUND TO BE STAINLESS STEEL
2. LOWER STANDPIPE OF HYDRANTS SHALL BE WRAPPED WITH POLYETHLENE (SEE SECTION 2.2.6)



RESTRAINED MECHANICAL JOINT

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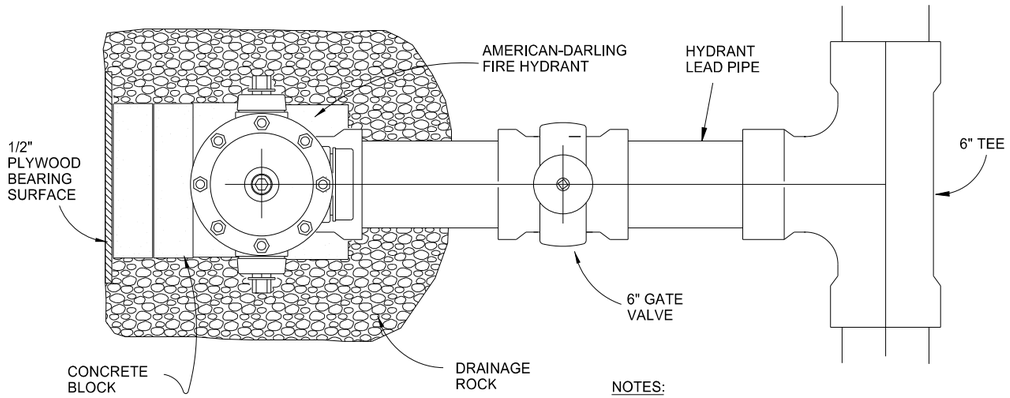
General Details

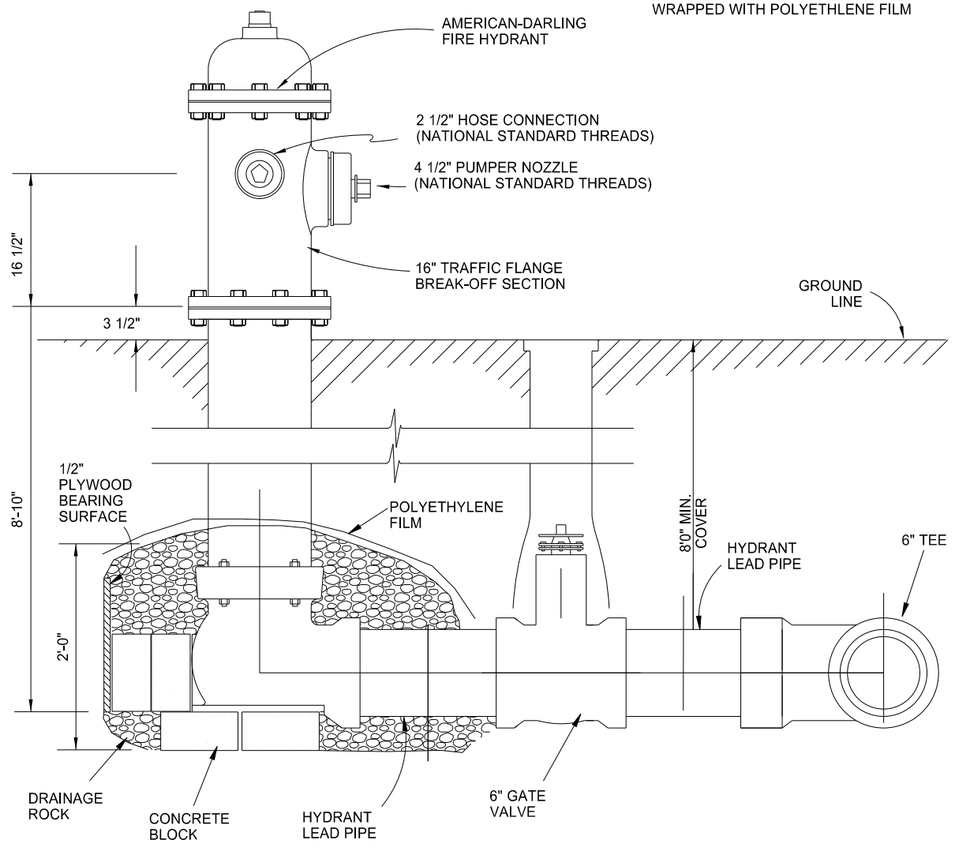
Restraint Device For PVC Pipe Bell Joints
Restrained Mechanical Joint

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	12

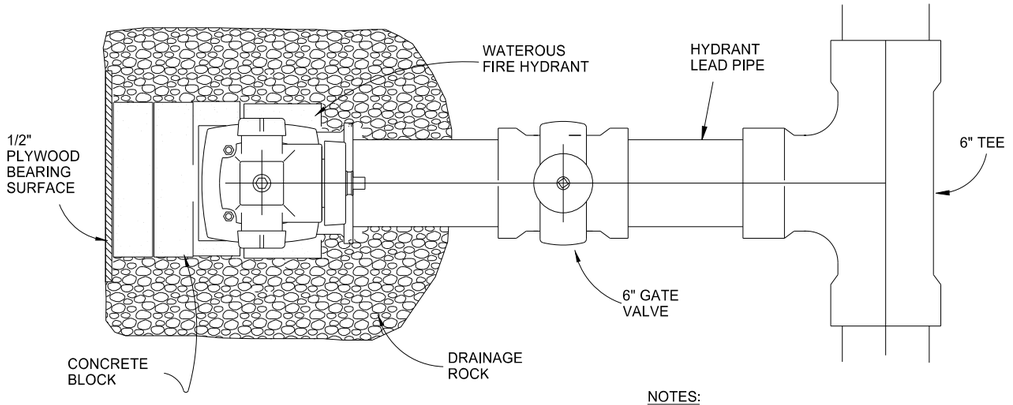


NOTES:

1. OPERATING & CAP NUTS: CITY OF FARGO STANDARDS
2. BOLTS BELOW GROUND SHALL BE STAINLESS STEEL
3. LOWER STANDPIPE OF ALL HYDRANTS SHALL BE WRAPPED WITH POLYETHLENE FILM

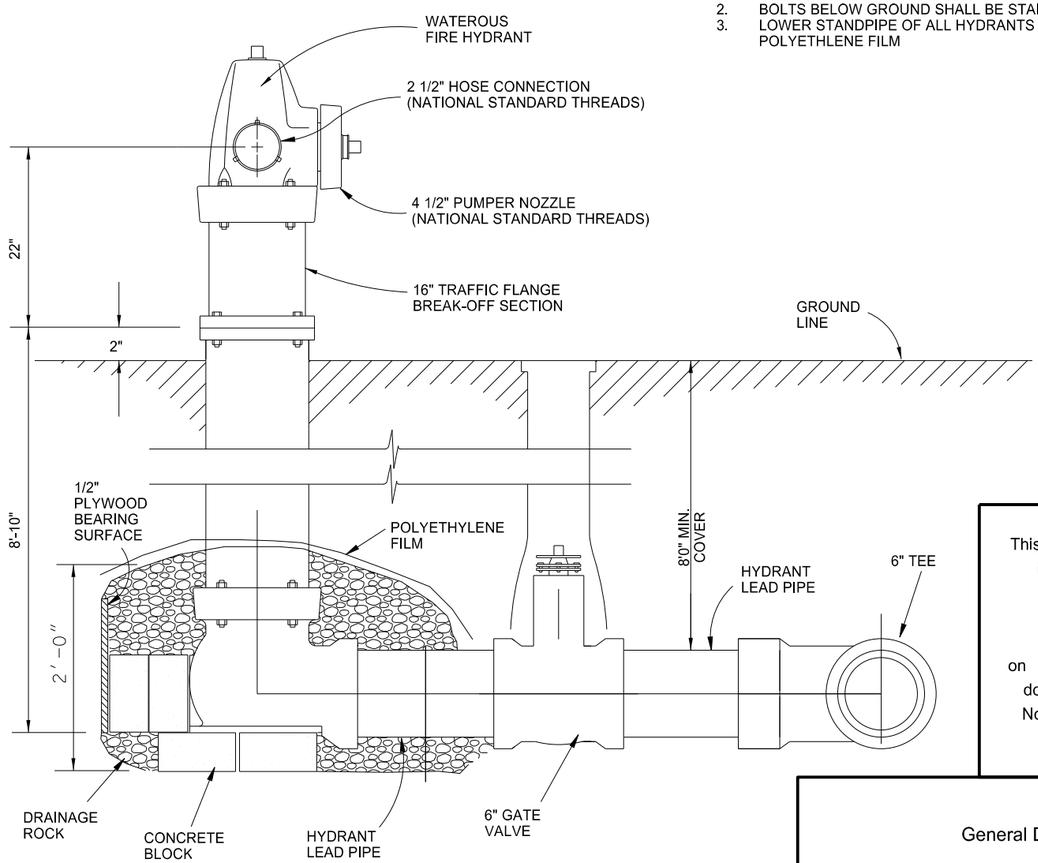


AMERICAN DARLING
HYDRANT CONNECTIONS



NOTES:

1. OPERATING & CAP NUTS: CITY OF FARGO STANDARDS
2. BOLTS BELOW GROUND SHALL BE STAINLESS STEEL
3. LOWER STANDPIPE OF ALL HYDRANTS SHALL BE WRAPPED WITH POLYETHLENE FILM



WATEROUS
HYDRANT CONNECTIONS

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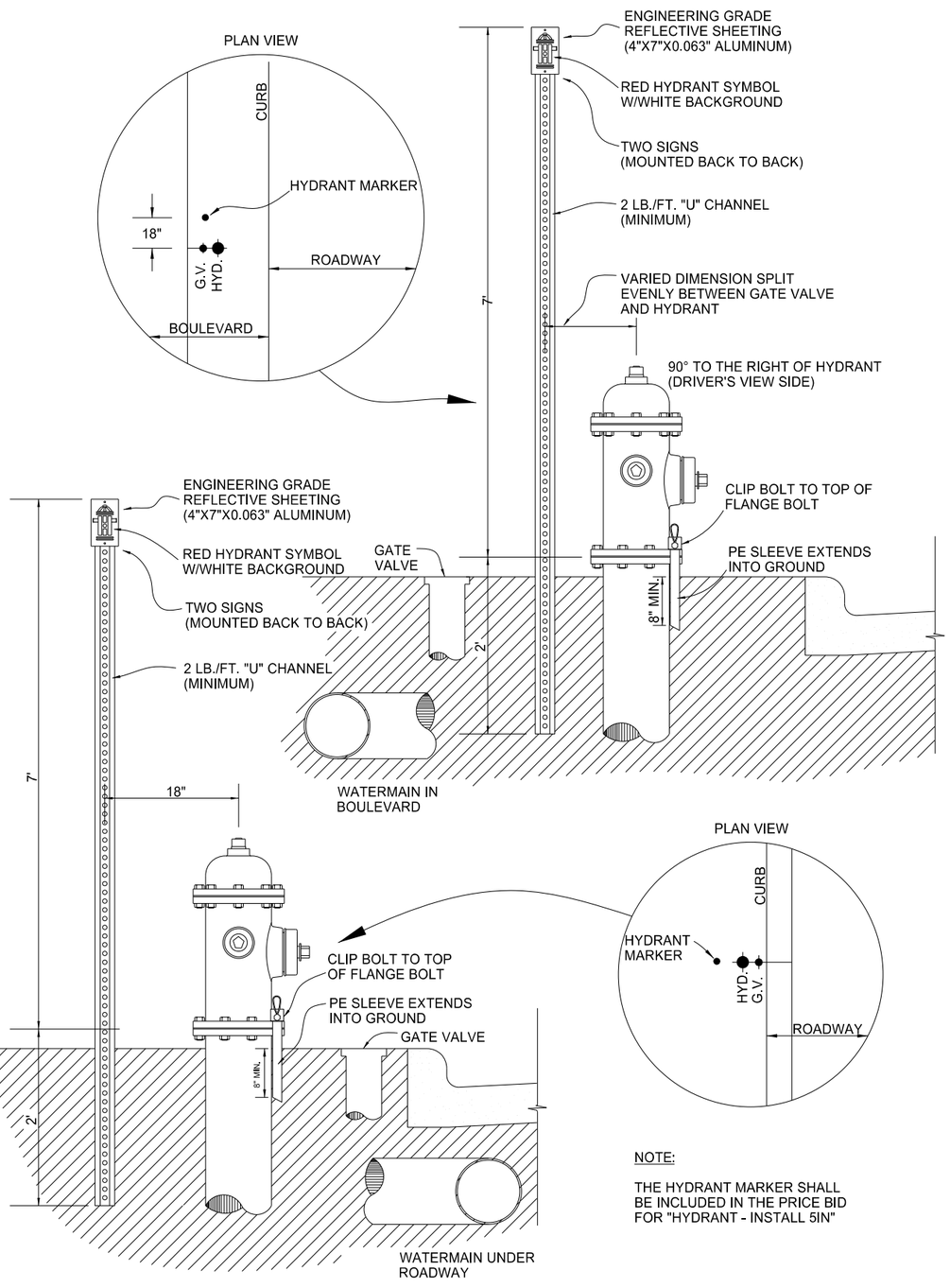
General Details

American Darling Hydrant Connections
Waterous Hydrant Connections

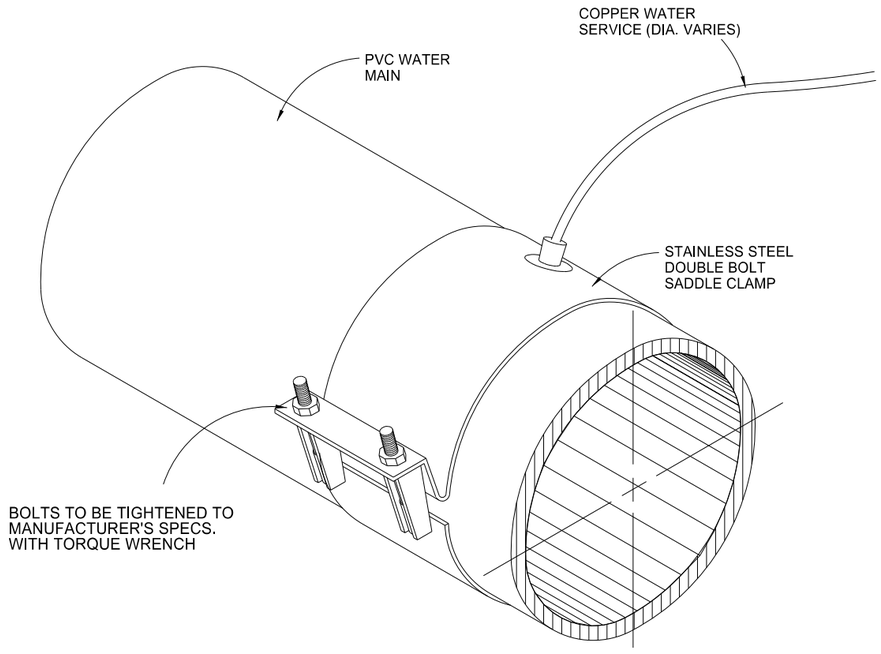
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	13



HYDRANT MARKER
DETAIL

NOTE:

THE HYDRANT MARKER SHALL
BE INCLUDED IN THE PRICE BID
FOR "HYDRANT - INSTALL 5IN"



NOTES:

1. THE CONTRACTOR WILL BE REQUIRED TO USE ALL STAINLESS STEEL SADDLE SERVICES. DIRECT TAPS WILL NOT BE PERMITTED.
2. ROMAC 304, FORD FS303, POWERSEAL 3412-AS OR CASCADE CSC1 AND CSC2 ARE APPROVED FOR INSTALLATION.

WATER MAIN
TAPPING SADDLE

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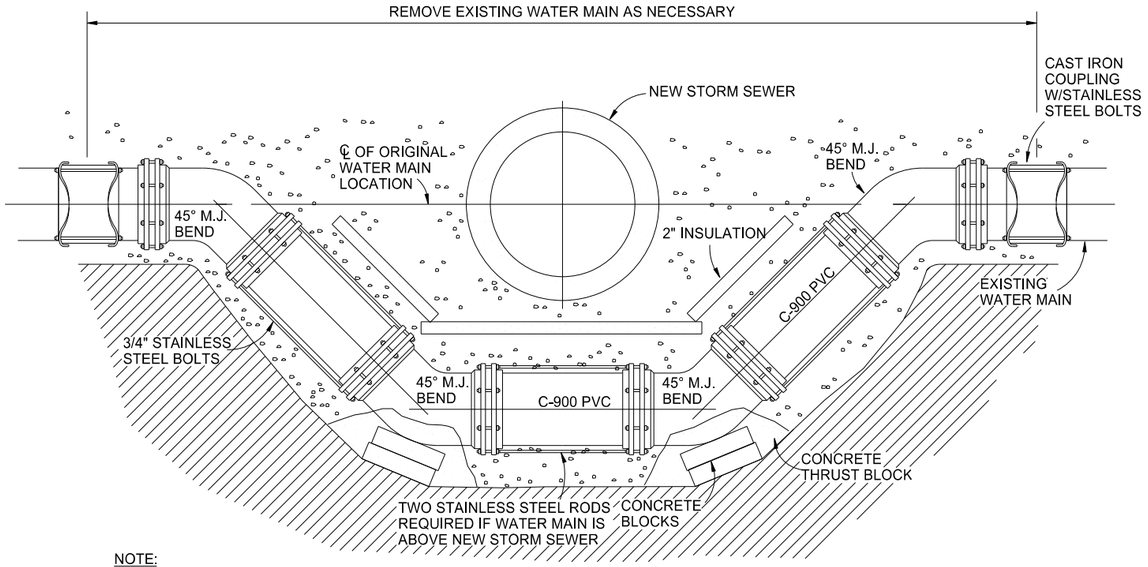
General Details

Hydrant Marker Detail
Water Main Tapping Saddle

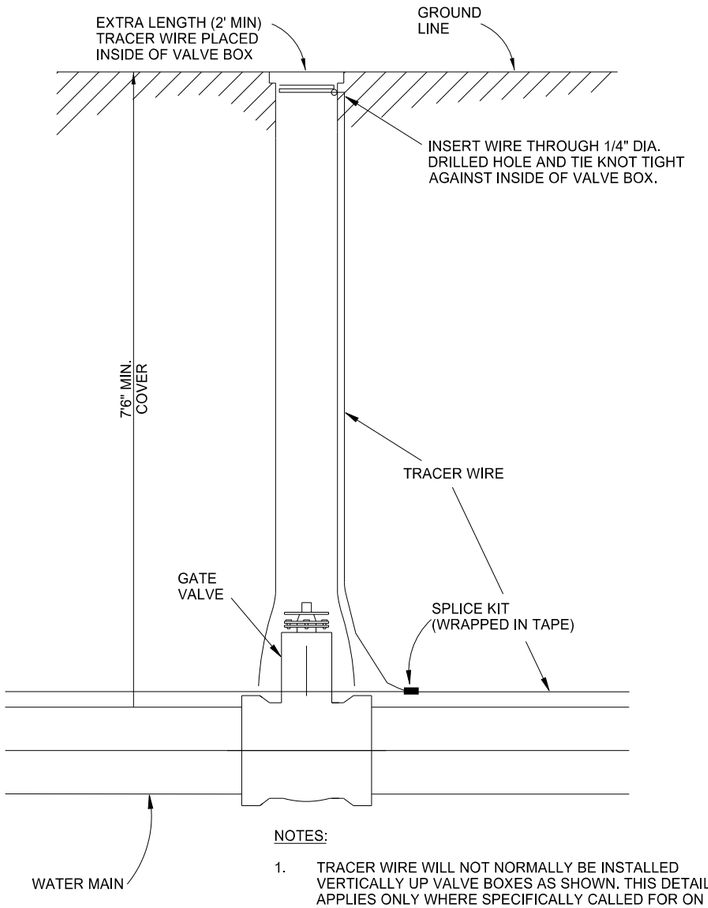
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	14



NOTE:

ALL FITTINGS TO BE WRAPPED IN POLYETHYLENE PLASTIC (8 MIL MIN.) BELLS AND BOLTS TO BE KEPT FREE OF CONCRETE.

WATER MAIN
RELOCATION DETAIL



NOTES:

1. TRACER WIRE WILL NOT NORMALLY BE INSTALLED VERTICALLY UP VALVE BOXES AS SHOWN. THIS DETAIL APPLIES ONLY WHERE SPECIFICALLY CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. SPLICE KIT AND TRACER WIRE SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

VALVE TRACER
WIRE DETAIL

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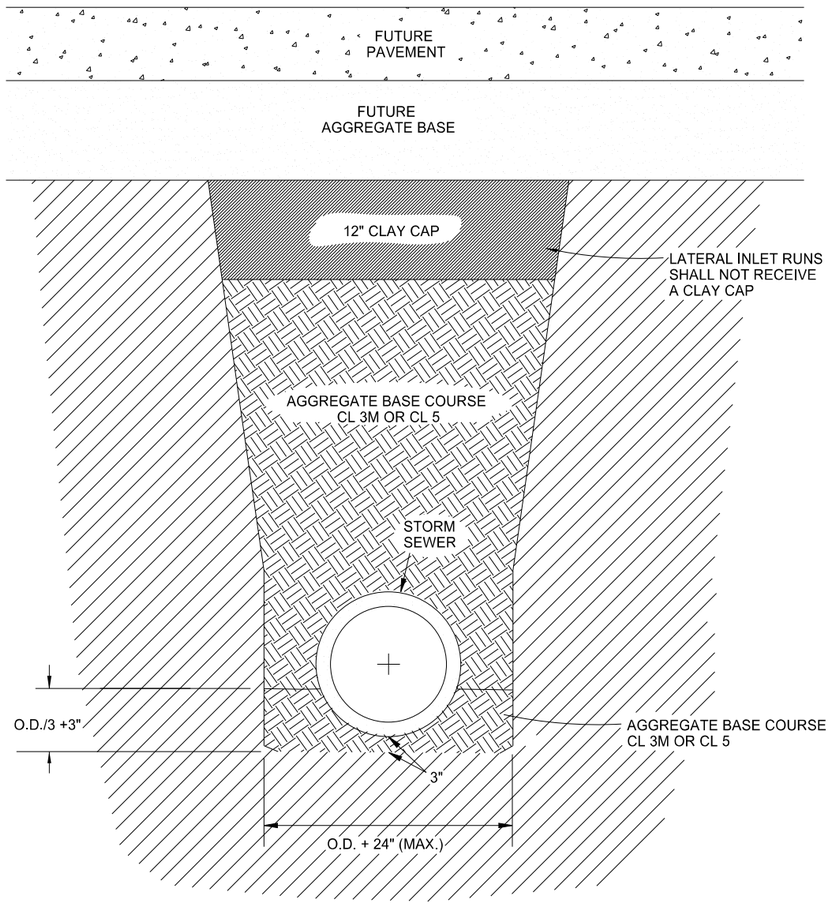
General Details

Water Main Relocation Detail
Valve Tracer Wire Detail

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	15



STORM SEWER TRENCH BACKFILL
(ALL LOCATIONS ON PROJECT SU-8-984(152)155)

NOTES:

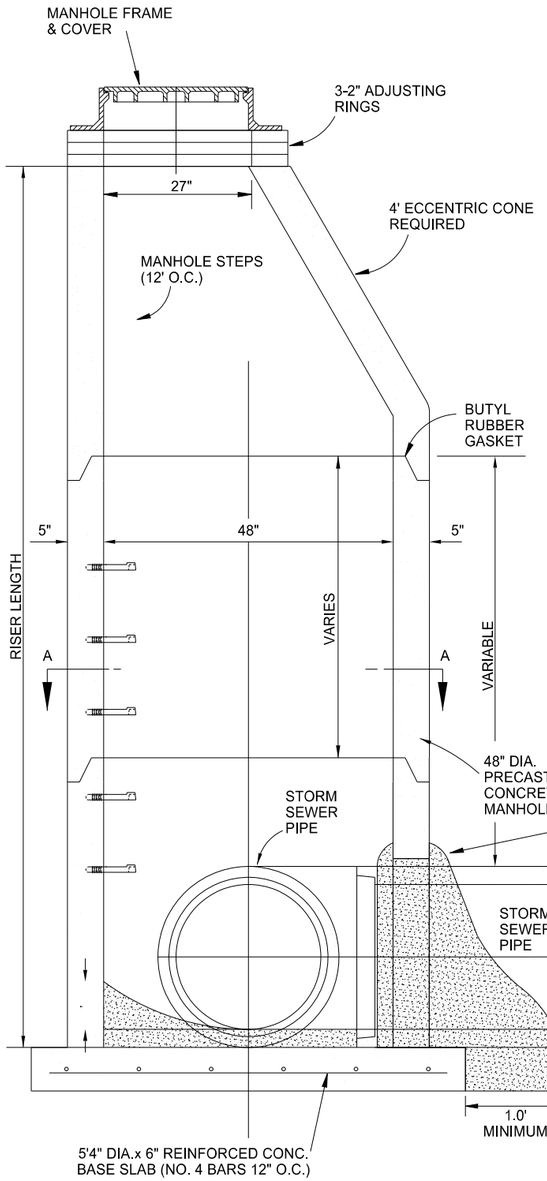
1. MAXIMUM TRENCH WIDTH FOR 60", 66" & 72" RCP NOT TO EXCEED OUTSIDE DIAMETER OF PIPE + 12" FROM BOTTOM OF TRENCH TO A POINT 2' ABOVE PIPE.
2. ALL LIFTING HOLES TO BE PLUGGED & MORTARED.
3. AGGREGATE BASE COURSE CL 3M OR CL 5 PIPE BEDDING AND BACKFILL SHALL BE INCLUDED IN THE PRICE BID FOR THE STORM SEWER PIPE.

General Details

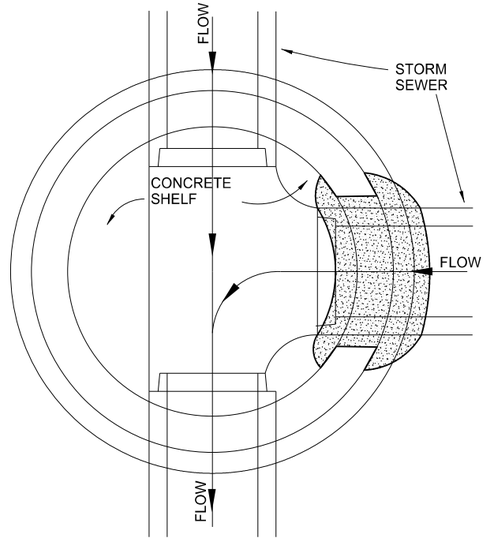
Storm Sewer Trench Backfill
Storm Sewer Trench Under New Pavement

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	16

IM-8-029(166)062



MANHOLE 48IN



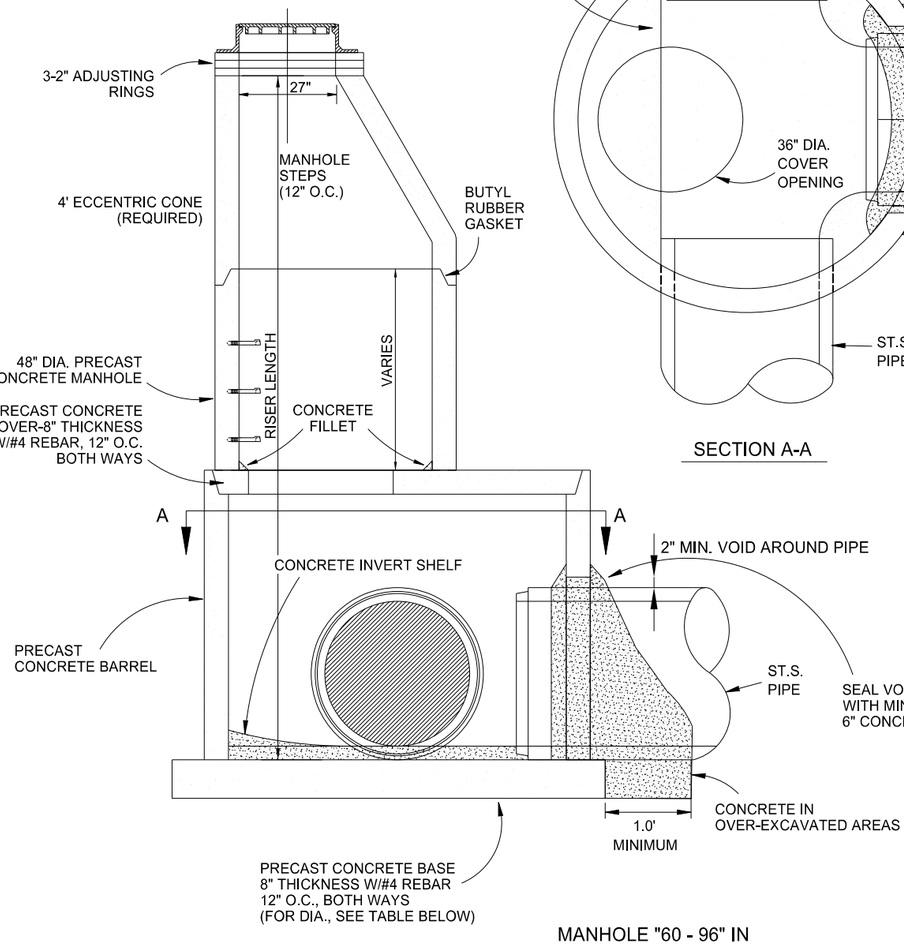
SECTION A-A

NOTE:

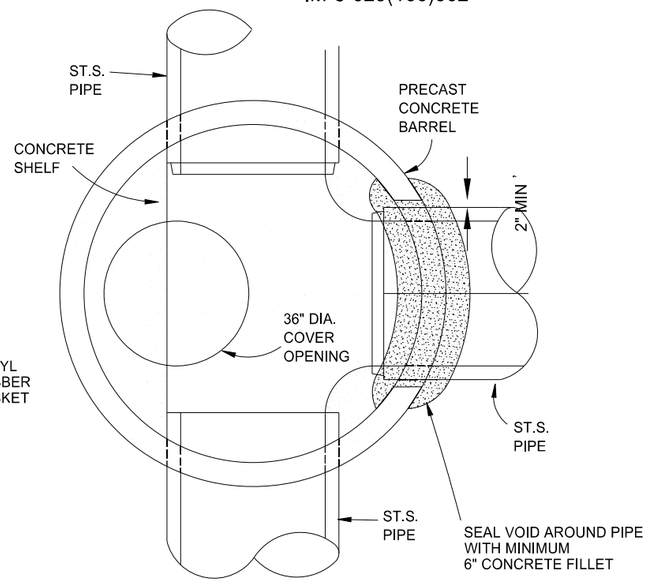
BUTYL RUBBER GASKET ON ALL JOINTS (JOINT TO MEET ASTM 433 REQUIREMENT)

NOTES:

1. BUTYL RUBBER GASKET ON ALL JOINTS (JOINT TO MEET ASTM 433 REQUIREMENT)
2. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER BASED ON STRUCTURE LOCATION & PURPOSE.



MANHOLE "60 - 96" IN



SECTION A-A

(A) MANHOLE INSIDE DIA.	(B) MANHOLE OUTSIDE DIA.	MAXIMUM PIPE SIZES		
		0° ∠	90° ∠	135° ∠
60"	7'-0"	36"	24"	36"
72"	8'-0"	42"	33"	42"
84"	9'-4"	48"	36"	48"
96"	10'-6"	60"	42"	60"

NOTES:

1. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER.
2. MAXIMUM RCP DIA.-27" STRAIGHT THRU. MAXIMUM RCP DIA-18" AT RIGHT ANGLES.
3. ALL JOINTS AND LIFTING HOLES SHALL BE MORTARED.

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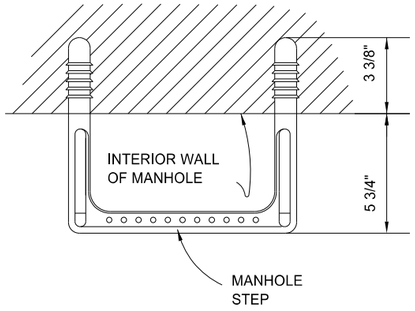
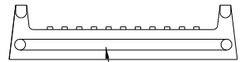
General Details

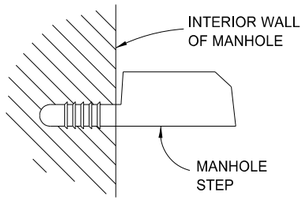
Manholes

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	17

IM-8-029(166)062



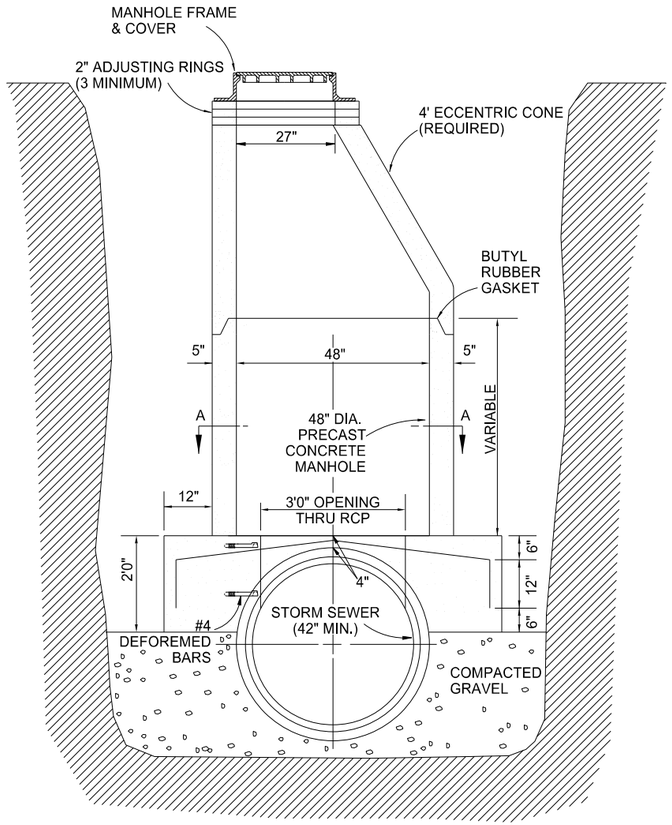


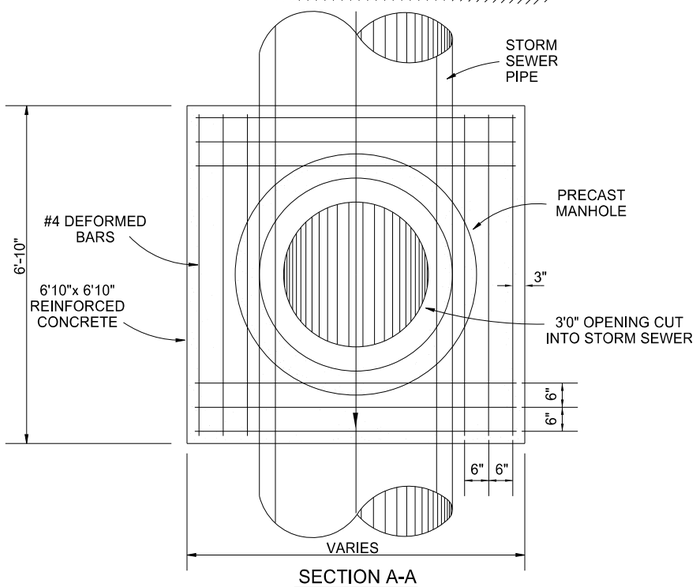


NOTE:

STEP SHALL BE CONSTRUCTED OF 1/2" REINFORCING ROD AND COMPLETELY ENCASED IN A CORROSION RESISTANT RUBBER OR POLYPROPYLENE PLASTIC, WHICH WILL RESIST DETERIORATION FROM HYDROGEN SULFIDE OR OTHER CHEMICALS AND GASES ENCOUNTERED IN MANHOLE APPLICATION. ALSO, STEP SHALL HAVE A VERTICAL RESISTANCE OF 400 LBS., AND A PULLOUT RESISTANCE OF 1000 LBS. SUCH AS: THE WEDG-LOC STEP BY DELTA PIPE PRODUCTS OR APPROVED EQUAL.

MANHOLE STEP DETAIL



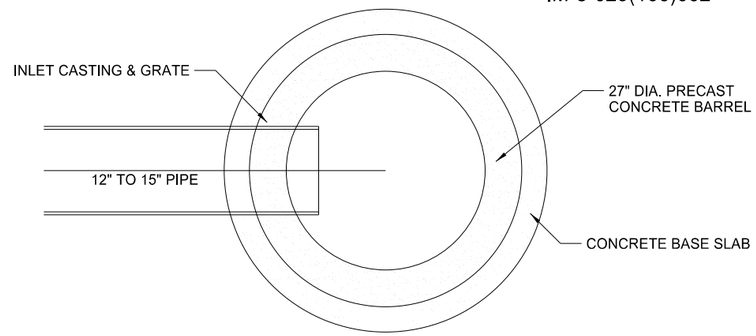


SECTION A-A

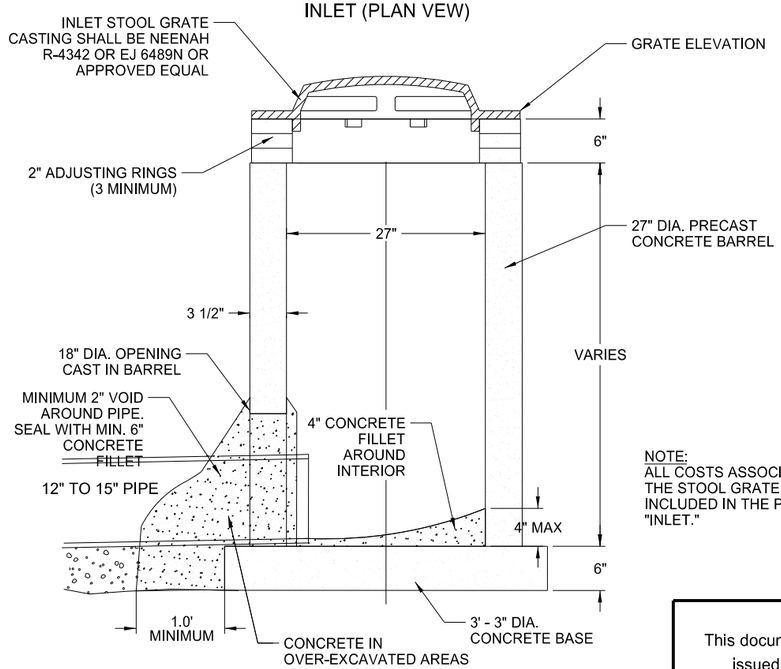
NOTES:

1. BUTYL RUBBER GASKET ON ALL JOINTS (JOINTS TO MEET ASTM 433 REQUIREMENT).
2. 3'0" OPENING THRU TOP OF R.C.P. SHALL BE GIVEN A SMOOTH MORTAR FINISH TO PERMIT ENTRY INTO STORM SEWER.
3. CASTING FRAME AND COVER SHALL DETERMINED BY THE ENGINEER BASED ON STRUCTURE LOCATION AND PURPOSE.
4. ALL JOINTS AND LIFTING HOLES SHALL BE MORTARED.
5. ALL COSTS ASSOCIATED WITH THE STORM SEWER SADDLE MANHOLE SHALL BE INCLUDED IN THE PRICE BID FOR "MANHOLE SPECIAL."

STORM SEWER MANHOLE SPECIAL DETAIL



INLET (PLAN VEW)



NOTE:
ALL COSTS ASSOCIATED WITH THE STOOL GRATE SHALL BE INCLUDED IN THE PRICE BID FOR "INLET."

INLET (SIDE VEW)

STORM SEWER INLET DETAIL

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General Details

Manhole Special - Saddle Manhole
Inlet - Stool Grate

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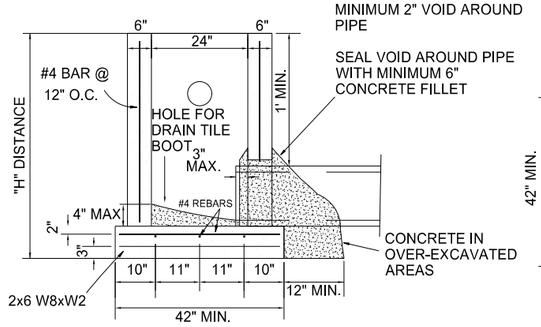
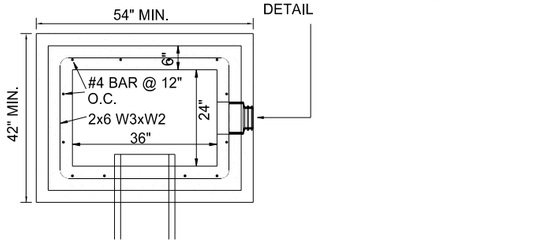
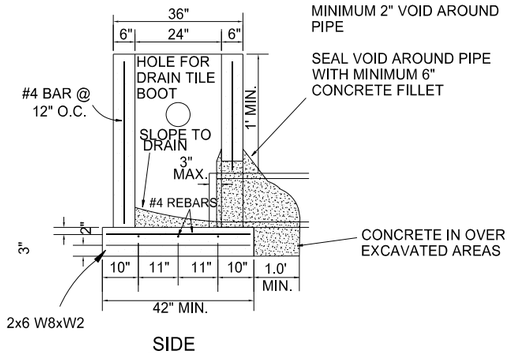
	ND	SU-8-984(152)155	20	18

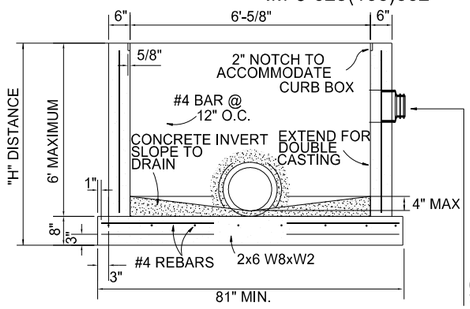
IM-8-029(166)062

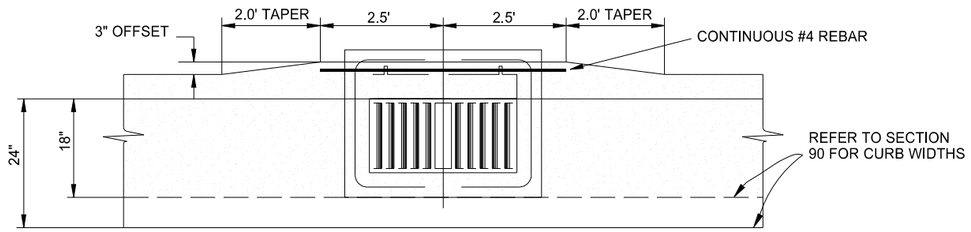




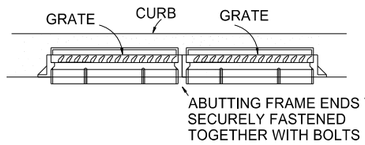


SIDE

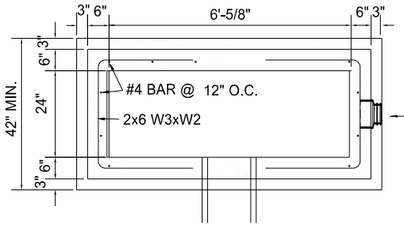




TYPE I CURB - PLAN VIEW

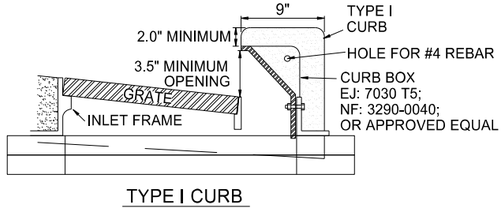


FRONT



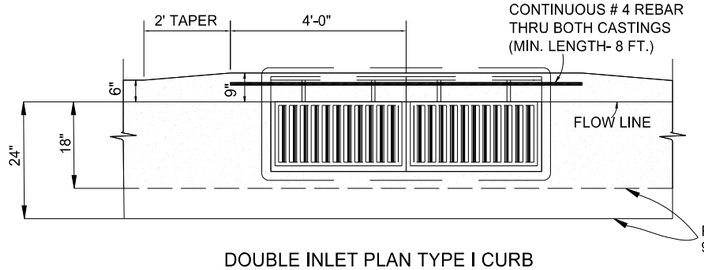
PLAN

(AS REQUIRED) WATERTIGHT FLEXIBLE PIPE-TO-MH-CONNECTOR FOR 4" PVC DRAIN TILE SEE STORM INLET/PVC DRAIN PIPE DETAIL

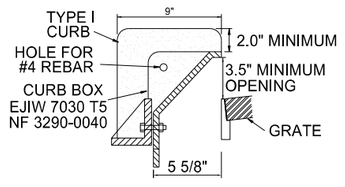


TYPE I CURB

INLET - TYPE 2 DETAIL



DOUBLE INLET PLAN TYPE I CURB



TYPE I CURB

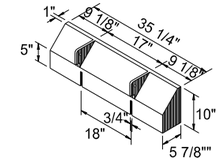
TABLE 1 - INLET CASTINGS AND GRATES					
INLET LOCATION	INLET TYPE	FRAME TYPE		GRATE TYPE	
		NEENAH FOUNDRY	EJ	NEENAH FOUNDRY	EJ
LOW POINT	INLET - TYPE 2 DOUBLE	R-3295-2	7031	V	M4
LOW POINT	INLET - TYPE 2	R-3067-VB	7030	VB	M11
INTERMEDIATE	INLET - TYPE 2 DOUBLE	R-3295-2	7031	V	M4
INTERMEDIATE	INLET - TYPE 2	R-3067V	7030	V	M4

NOTES:

1. THE DEFORMED REINFORCING STEEL SHALL CONFORM TO AASHTO M31
2. METAL USED IN THE MANUFACTURE OF CASTING SHALL CONFORM TO AASHTO M-105, CLASS 35B.
3. THE CONTRACTOR SHALL HAVE THE OPTION OF USING PRECAST OR POURED IN PLACE BASES. CLASS OF CONCRETE SHALL BE AE-3. THE AGGREGATE SIZE SHALL BE APPROVED BY THE ENGINEER IN THE FIELD. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 722 OF THE NDDOT STANDARD SPECIFICATIONS.
4. PRECAST RISERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C858.
5. ON PROJECTS WITH P.C.C. PAVEMENT, ALL INLET RISERS OR BARRELS SHALL BE CONSTRUCTED 4 TO 5 INCHES BELOW FINAL ELEVATION AND ADJUSTED TO FINAL GRADE AFTER THE PAVING. ADJUSTMENTS MAY BE DONE WITH ADJUSTMENT RINGS, MASONARY OR CAST-IN-PLACE. ALL COST FOR THIS ADJUSTMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE INLET.
6. WELDED WIRE FABRIC SHALL CONFORM TO AASHTO M55 GRADE 65.

   CURB BOX
   STANDARD CURB - NEENAH 3290-0040, EAST JORDAN T5, OR APPROVED.
7. INLET CASTINGS AND GRATES SHALL BE THE TYPES LISTED IN "TABLE 1 - INLET CASTINGS AND GRATES" OR AN APPROVED EQUAL.

INLET - TYPE 2 DOUBLE DETAIL



CURB BOX:
STANDARD CURB - NEENAH 3290-0040 OR E.J. T5
MOUNTABLE CURB - NEENAH 3067-7009 OR E.J. T7
OR APPROVED EQUAL

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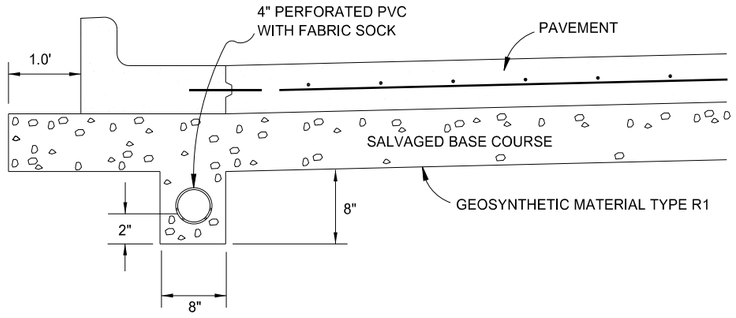
General Details

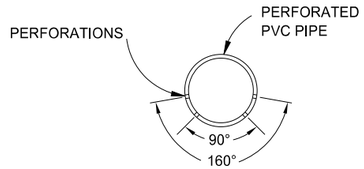
Inlet - Type 2
Inlet - Type 2 Double

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	19

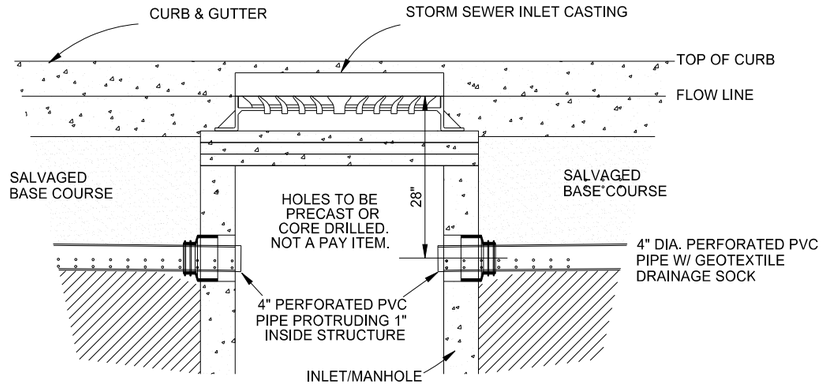
IM-8-029(166)062



EDGE DRAIN PLACEMENT



4" PVC PIPE DETAIL



INLET/MANHOLE CONNECTION

NOTES:

1. INSERTA TEE, LINK-SEAL, OR OTHER APPROVED EQUAL MAY BE UTILIZED WITH ENGINEER APPROVAL.
2. SEE 4" PVC EDGE DRAIN DETAIL FOR ADDITIONAL DETAILS.

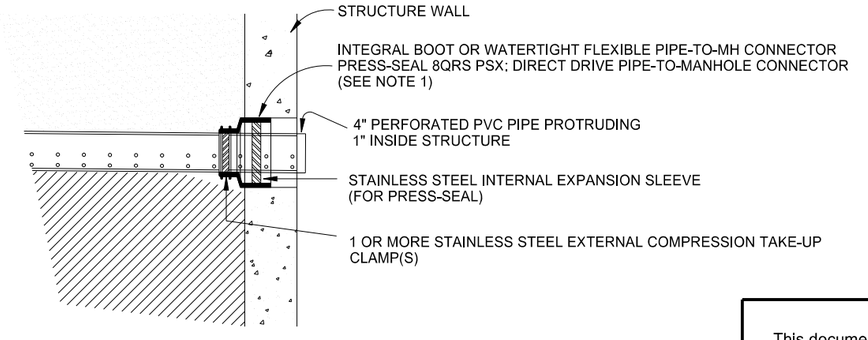
TYPE OF PIPE:

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 EDGEDRAIN NON PERMEABLE BASE.
5. PIPE SIZE: 4" DIAMETER IPS SCH 40
6. ROWS OF PERFORATIONS: 4
7. HOLE SIZE: 1/4"
8. HOLE SPACING PER ROW: 3"

4" PVC EDGE DRAIN DETAIL

NOTES:

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



CONNECTION DETAIL

STORM INLET/PVC DRAIN PIPE DETAIL

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General Details

Edgedrain Non Permeable Base
Storm Inlet/PVC Drain Pipe Detail

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	20

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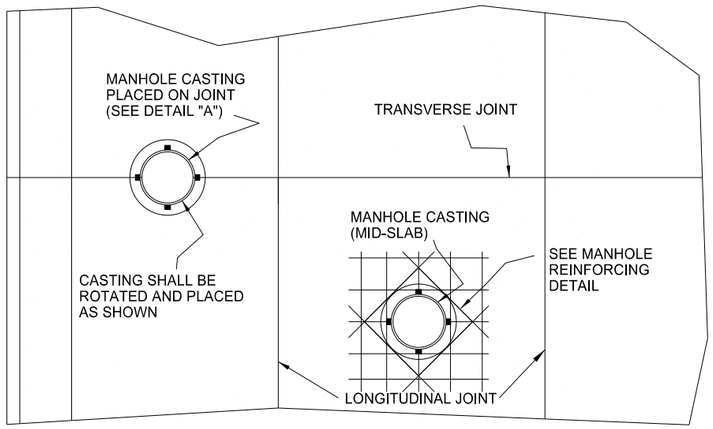
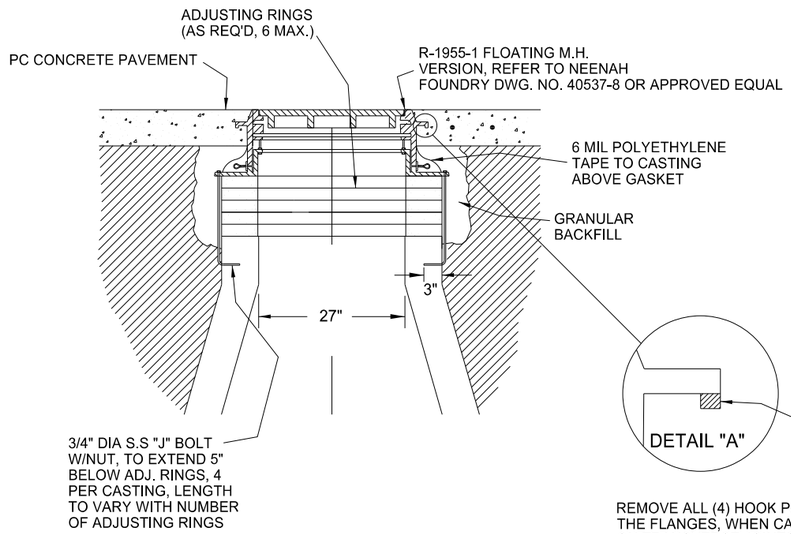
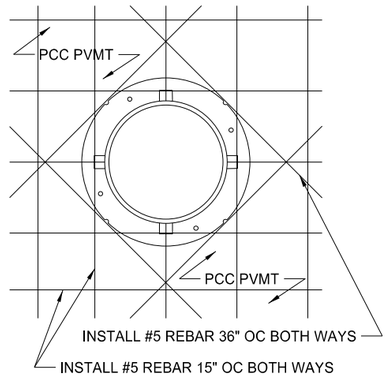




FLOATING MANHOLE
NEENAH FOUNDRY TYPE
OR APPROVED EQUAL

FLOATING MANHOLE
CASTING DETAIL



MANHOLE REINFORCING DETAIL

NOTES:

1. THIS DETAIL APPLIES TO ALL MH's LOCATED WITHIN THE CONCRETE PAVING SECTION.
2. FURNISH / INSTALL WILL BE PAID UNDER THE "MANHOLE" BID ITEM OR "MANHOLE CASTING TYPE 2."
3. STORM SEWER CASTING LIDS SHALL HAVE THE WORD "STORM" (OR THE WORDS "STORM SEWER") CAST INTO THE CENTER OF THE LID IN LETTERS AT LEAST ONE INCH HIGH.
4. SANITARY SEWER CASTING LIDS SHALL BE WATER TIGHT AND HAVE THE WORD "SANITARY" (OR WORDS "SANITARY SEWER") CAST INTO THE CENTER OF THE LID IN LETTERS AT LEAST ONE INCH HIGH.
5. ADJUSTMENTS TO THE MANHOLES RECEIVING NEW CASTINGS WILL BE PAID FOR AS "ADJUST MANHOLE" OR "ADJUST MANHOLE SPECIAL".
6. MANHOLE CASTINGS SHALL BE INSTALLED WITH THE PAVING OPERATION. MANHOLE ISOLATION OR BOX OUTS WILL NOT BE ALLOWED.

General Details

Floating Manhole Casting Detail
(Manhole Casting Type 2)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	21

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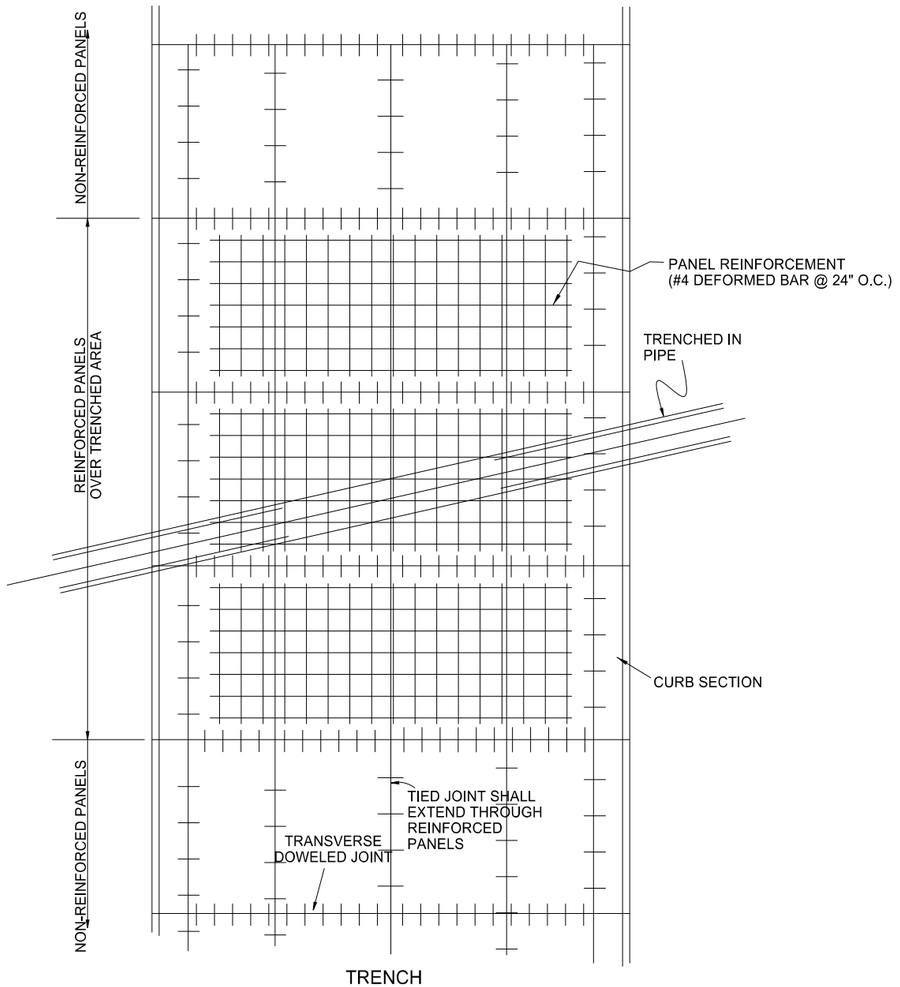
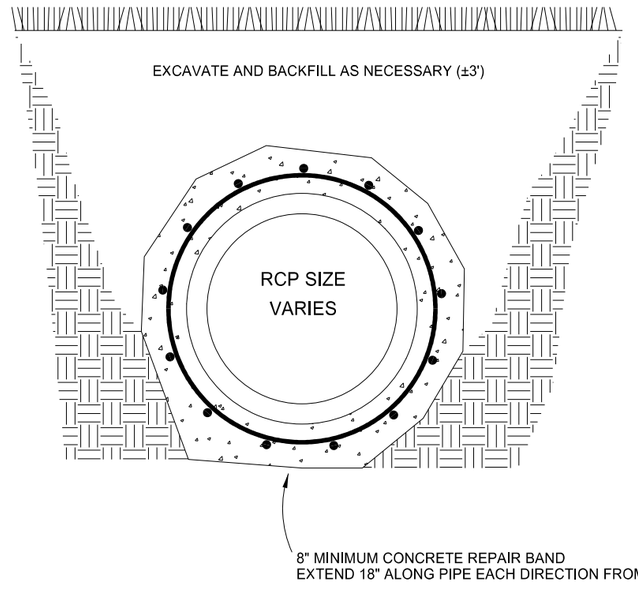


TRENCH
REINFORCEMENT DETAIL

REINFORCING:

5 - NO. 4 DEFORMED BARS (CIRCUMFERENTIAL)
NO. 4 DEFORMED BARS 12 O.C. (TRANSVERSE ACROSS JOINT)



PIPE JOINT REPAIR BAND DETAIL

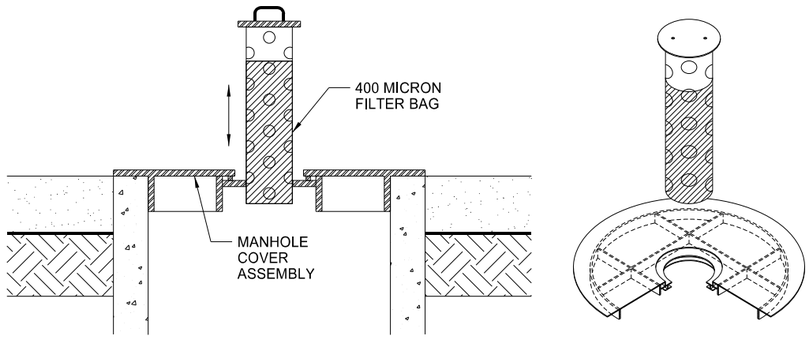
NOTES:

1. AREAS FOR REINFORCEMENT SHALL BE DETERMINED BY THE ENGINEER USING SECTION 90 PLAN SHEETS AS A GUIDELINE. PAYMENT FOR REINFORCEMENT SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE PAVEMENT.
2. THE COMPLETE PANEL SHALL BE REINFORCED IF ANY PART OF THE PANEL IS WITHIN 5' OF THE PIPE CENTERLINE.
3. REBAR MAT SHALL BE SUPPORTED BY CHAIRS AT THE MID-DEPTH POINT OF THE SLAB.
4. REBAR SHALL STOP WITHIN 1' OF THE DOWELED CONTRACTION JOINT AT THE ADJACENT NON-REINFORCED PANEL.

General Details

Trench Reinforcement Detail
Pipe Joint Repair Band Details

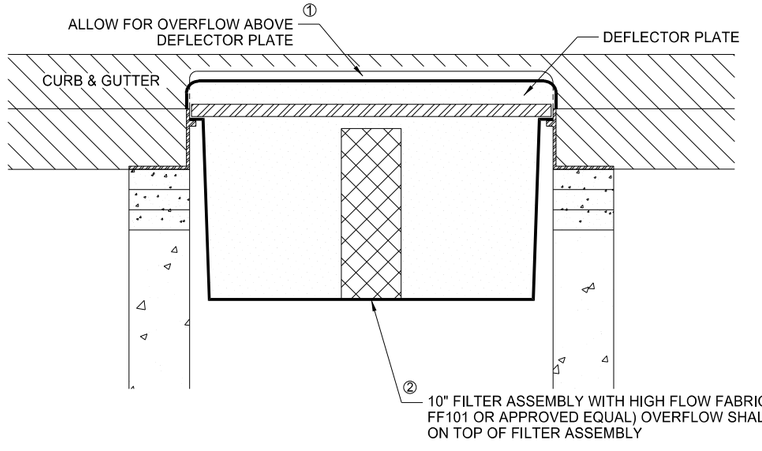
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	22

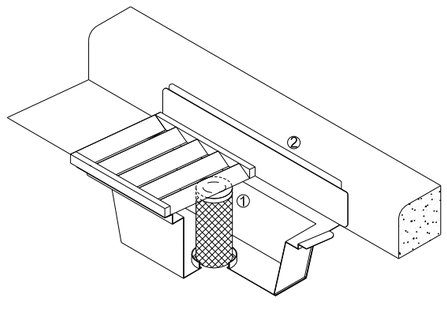


INLET PROTECTION FOR INLETS WITHIN PAVING SECTION TO BE INSTALLED BEFORE PAVING
(TYPE C)

NOTES:

1. THE DEVICE SHALL CONSIST OF A REUSABLE, OPEN TOPPED RECEPTACLE THAT RESTS INSIDE A STORM SEWER INLET CASTING ALLOWING THE GRATING TO BE REINSTALLED IN THE CASTING. IF NEEDED, A REAR DEFLECTOR PLATE SHALL BE INCORPORATED INTO THE UNIT TO PROTECT OPEN BACK CASTINGS FROM SEDIMENT. THE RECEPTACLE SHALL HAVE A FILTRATION SYSTEM TO FILTER STORM WATER. THE RECEPTACLE SHALL ALSO HAVE AN OVERFLOW LARGE ENOUGH TO MINIMIZE/ELIMINATE STREET FLOODING DURING RAIN EVENTS. APPROVED MANUFACTURERS SHALL BE WIMCO, LANGE IPD, FLEXSTORM, OR APPROVED EQUAL
2. THIS SHALL CONSIST OF INSTALLING A PREFABRICATED DROP-IN INLET PROTECTION DEVICE. THIS SHALL BE INSTALLED BY INSERTING THE DEVICE INTO THE CASTING AND REPLACING THE GRATE INTO THE FRAME. THIS DEVICE IS REQUIRED IN ALL INLETS THAT RECEIVE WATER FROM THE PROJECT AREA THAT ARE IN A STREET SECTION.
3. THIS DEVICE REMAINS ON SITE REQUIRING MAINTENANCE BY THE CONTRACTOR THROUGHOUT THE PROJECT AND BECOMES THE RESPONSIBILITY OF THE DEVELOPER/PROPERTY OWNER TO MAINTAIN UPON FINAL COMPLETION OF THE PROJECT.





OVERFLOW①- CENTER OF FILTER ASSEMBLY

OVERFLOW②- TOP OF CURB BOX

NOTES:

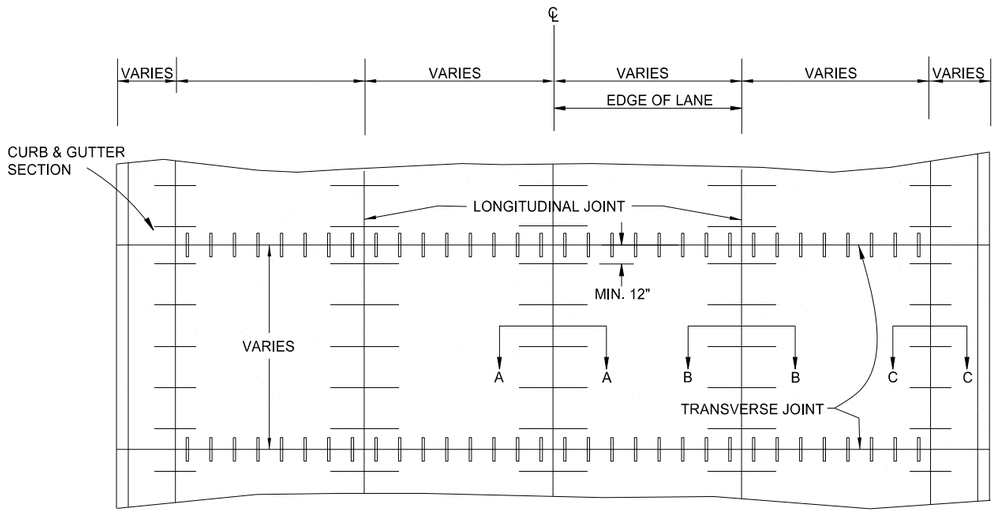
1. TYPE C-2 INLET PROTECTION SHALL CONSIST OF A SEDIMENT COLLECTION PLATE MEETING H20 LOADING PER OSHA 1910.23. 1/4" STEEL PLATE SHALL BE PAINTED YELLOW WITH A PERFORATED STEEL LID. A TWO POSITION HDPE BASKET SHALL BE PROVIDED THAT IS ABLE TO BE FIXED IN THE UP OR DOWN POSITION. 400 MICRON FILTER BAG FOR BASKET SHALL BE ATTACHED TO FILTER SEDIMENT.
2. THIS SHALL CONSIST OF INSTALLING A PREFABRICATED PLATE THAT WILL FIT INTO THE TOP OF THE CONE SECTION OF A CATCH BASIN OR MANHOLE. TO FURTHER PROTECT THE STORM SEWER FROM FINE MATERIALS THE SEDIMENT CONTROL PLATE SHALL INCLUDE A 400 MICRON FILTER BAG AROUND THE COLLECTION BASKET.
3. THIS DEVICE IS INTENDED TO PROTECT INLETS WITHIN THE FUTURE PAVING SECTION. THE DEVICE IS REUSEABLE AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

INLET PROTECTION FOR INLETS WITHIN PAVING SECTION TO BE INSTALLED AFTER FINAL PAVING
(TYPE C-2)

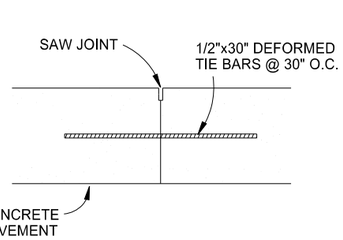
General Details

Inlet Protection - Special

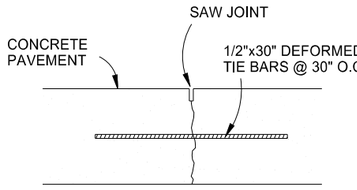
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	23
		IM-8-029(166)062		



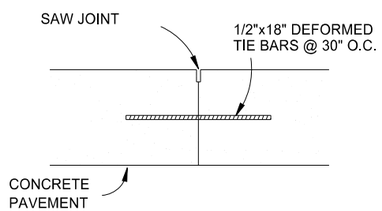
LONGITUDINAL JOINTS



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

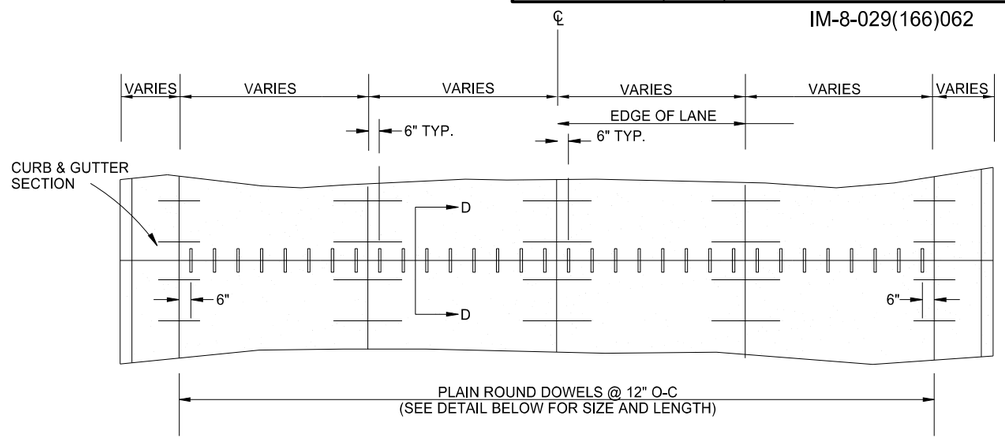


SECTION B-B
SAWED LONGITUDINAL JOINT

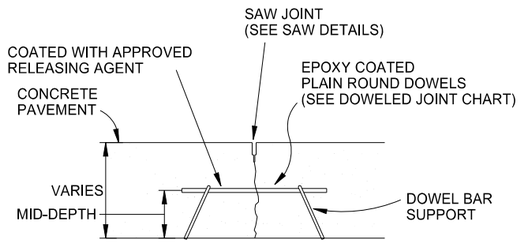


SECTION C-C
LONGITUDINAL CONSTRUCTION JOINT

LONGITUDINAL JOINTS



TRANSVERSE CONTRACTION JOINT
DOWEL ASSEMBLY



SECTION D-D
DOWEL ASSEMBLY

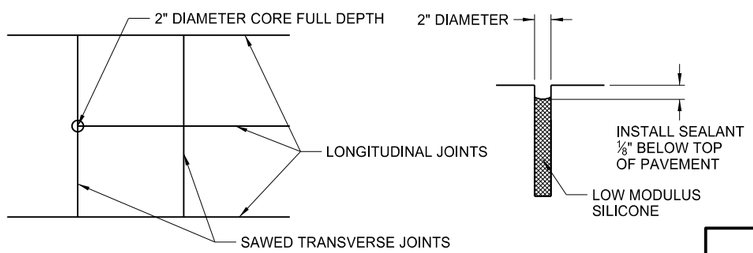
DOWELED JOINT CHART			
PAVEMENT THICKNESS	DOWEL BAR SIZE	HEIGHT TO CENTER	TOTAL DOWEL LENGTH
7"	1"	3 1/2"	18"
8" to 10"	1 1/4"	4 1/2"	18"
10.5" to 12"	1 1/2"	5 1/2"	18"

NOTE:
ALL DOWELS ARE TO BE SPACED AT 12" O-C

TRANSVERSE
CONTRACTION JOINTS

NOTE:

1. ALL DOWELS SHALL BE EPOXY COATED IN ACCORDANCE WITH AASHTO M254.



CORE DETAIL

NOTES:

1. ALL LONGITUDINAL JOINTS SHALL BE TIED.
2. SEE SAW JOINT DETAILS.
3. WHERE TIE BARS ARE INSTALLED AND LATE STRAIGHTENED, GRADE 40 STEEL SHALL BE USED.
4. ALL TIE BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH AASHTO M284.
5. 2" DIAMETER CORE SHALL BE THE FULL DEPTH OF PAVEMENT AND COMPLETED IN THE SAME TIME FRAME OF SAWED JOINTS.

General Details

Longitudinal Joints
Transverse Contraction Joints

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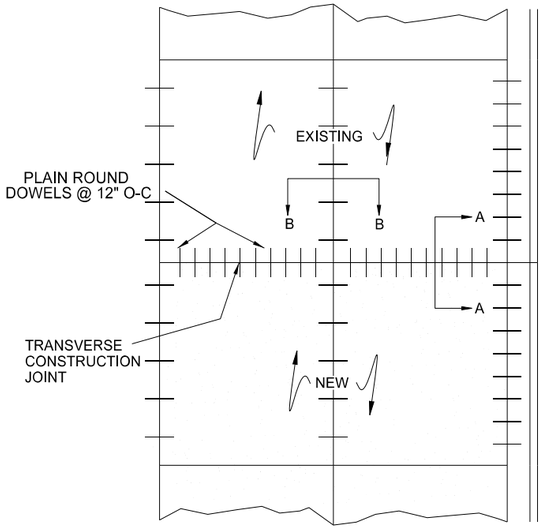
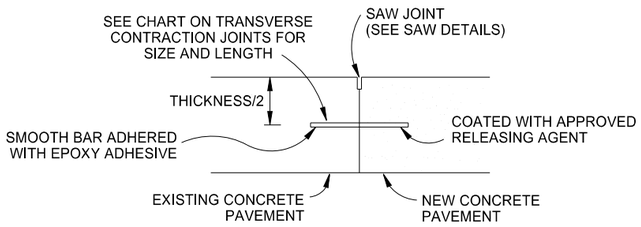
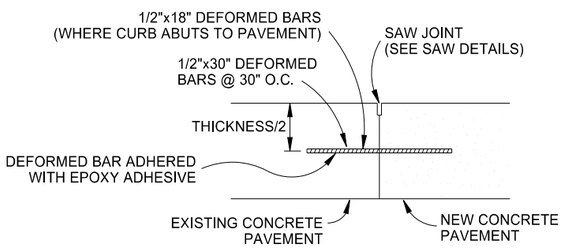


CONSTRUCTION JOINT
EXISTING TO NEW CONCRETE PAVEMENT

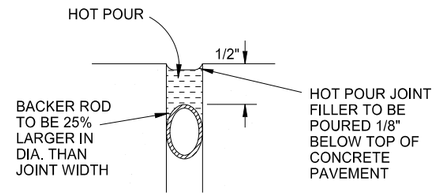


SECTION A-A (TRANSVERSE JOINTS)
EXISTING TO NEW

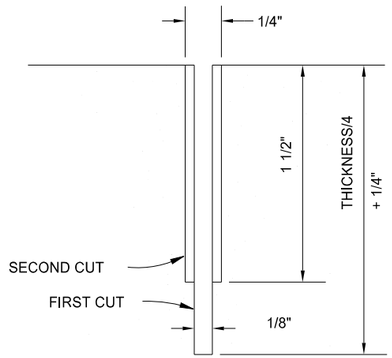


SECTION B-B (LONGITUDINAL JOINTS)
EXISTING TO NEW

CONSTRUCTION JOINT
DETAILS



JOINT FILLER DETAIL
(SEE NOTE 1)



SAW JOINT DETAIL
(SEE NOTE 2)

SAW JOINT
DETAIL

NOTES:

1. THE JOINT FILLER DETAIL APPLIES TO BOTH TRANSVERSE AND LONGITUDINAL JOINTS.
2. SAW JOINT DETAIL - THE FIRST & SECOND CUT SHALL BE COMPLETED ON ALL CONTRACTION JOINTS. ON ALL CONSTRUCTION JOINTS ONLY A CUT CONFORMING TO THE DIMENSIONS OF THE SECOND CUT SHOWN SHALL BE COMPLETED.
3. ALL JOINTS SHALL BE FILLED.

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General Details

Expansion Joint Detail
Construction Joint Details
Saw Joint Detail

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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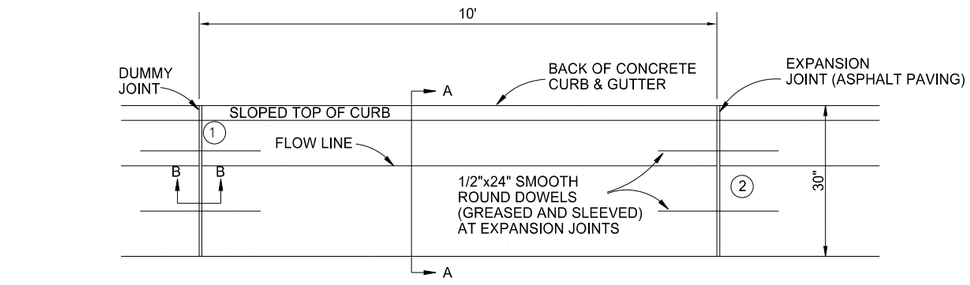
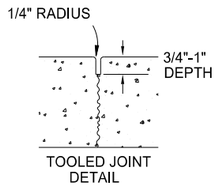
		IM-8-029(166)062		



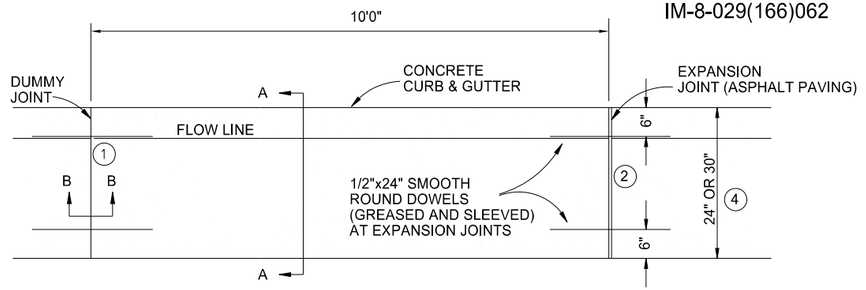
CURB & GUTTER MOUNTABLE - TYPE I PLAN



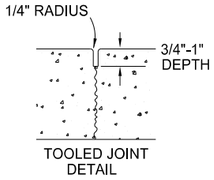
SECTION B-B

(1) DUMMY JOINT
1. PLACE AT 10'0" O.C. FOR ASPHALT PAVING
2. MATCH PANEL SPACING FOR CONCRETE PAVEMENT

(2) 1" EXPANSION JOINTS
1. PLACE AT P.C.'S AND HIGH POINTS FOR ASPHALT PAVING
2. MATCH EXPANSION JOINTS ON CONCRETE PAVEMENT



CURB & GUTTER - TYPE I PLAN

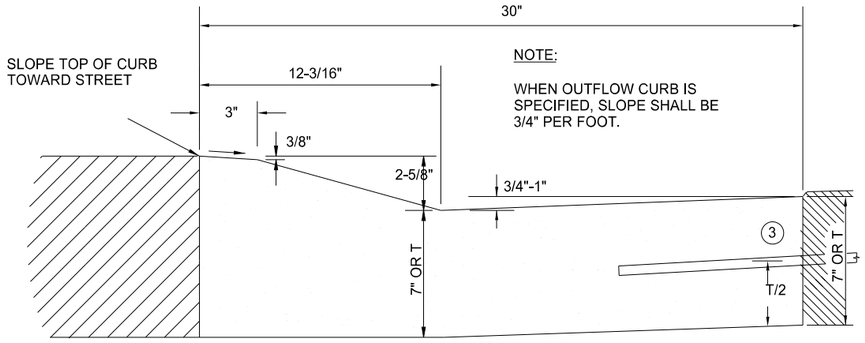


SECTION B-B

(1) DUMMY JOINT
(1) PLACE AT 10'0" O.C. FOR ASPHALT PAVING
(2) MATCH PANEL SPACING FOR CONCRETE PAVEMENT

(2) 1" EXPANSION JOINTS
(1) PLACE AT P.C.'S AND HIGH POINTS FOR ASPHALT PAVING
(2) MATCH EXPANSION JOINTS ON CONCRETE PAVEMENT

(4) 24" WIDTH: PAID FOR AS CURB & GUTTER - TYPE I
30" WIDTH: PAID FOR AS CURB & GUTTER - TYPE I 30IN



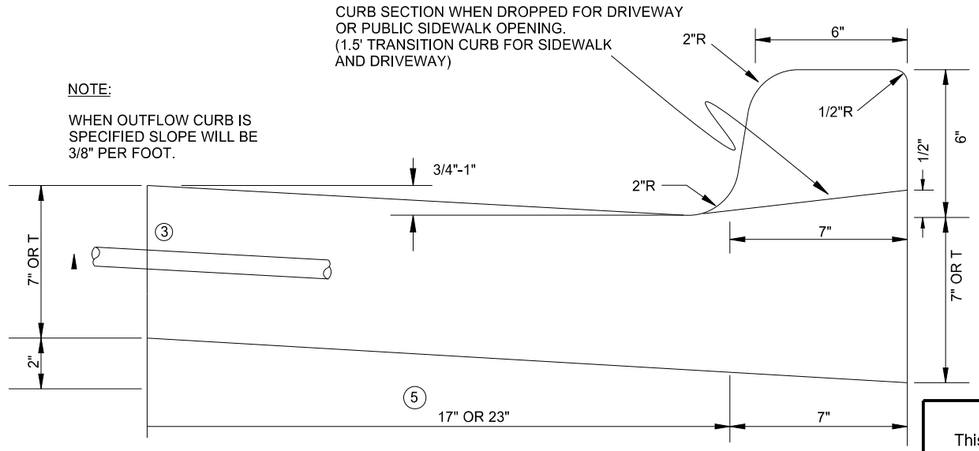
SECTION A-A

NOTE:

DIMENSION T SHALL MATCH THE THICKNESS OF THE ADJOINING CONCRETE SLAB WITH EITHER INTEGRAL OR SEPARATE CURB

(3) 1/2"x18" DEFORMED BARS AT 30" O.C. REQUIRED WHEN SEPARATE CURB IS INSTALLED WITH CONCRETE PAVING

CURB & GUTTER MOUNTABLE - TYPE I



SECTION A-A

NOTE:

DIMENSION T SHALL MATCH THE THICKNESS OF THE ADJOINING CONCRETE SLAB.

(3) 1/2"x18" DEFORMED BARS AT 30" O.C. REQUIRED WHEN SEPARATE CURB IS INSTALLED WITH CONCRETE PAVING

(5) 17" WIDTH: PAID FOR AS "CURB & GUTTER - TYPE I"
23" WIDTH: PAID FOR AS "CURB & GUTTER - TYPE I 30IN"

CURB & GUTTER - TYPE I

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General Details

Curb & Gutter-Type I

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	26

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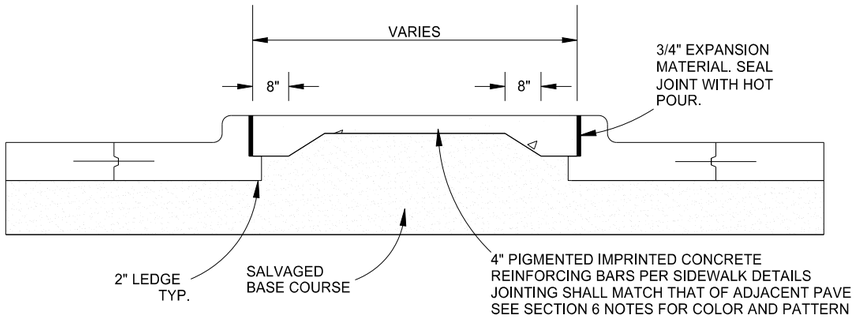
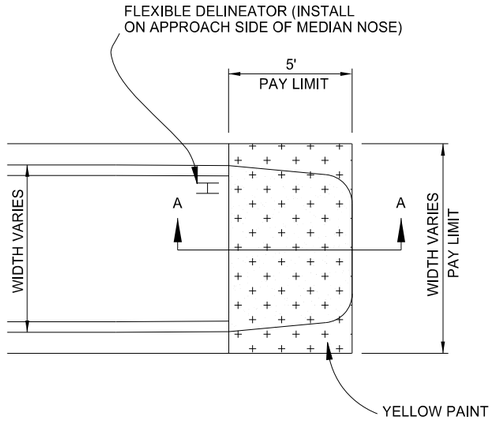


MEDIAN SECTION

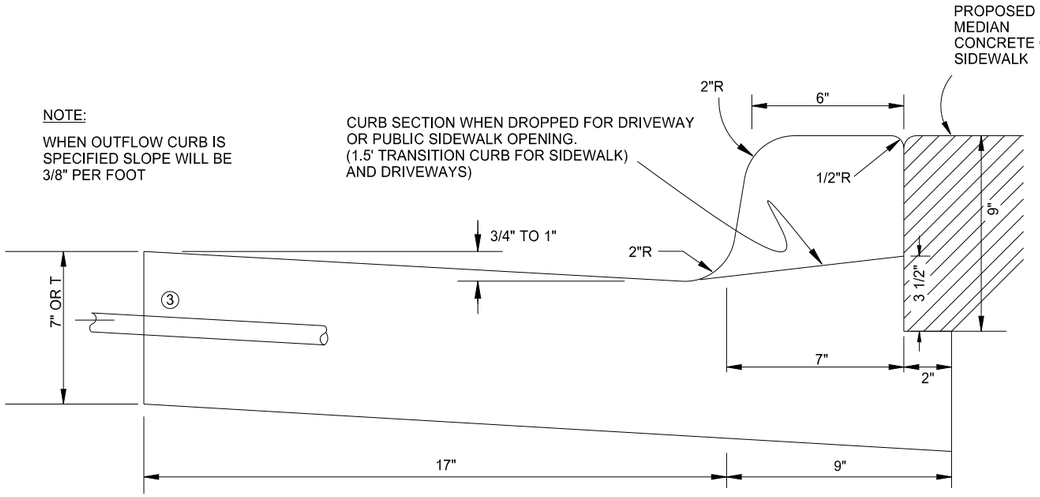


NOTE:
YELLOW PAINT SHALL BE INCLUDED IN THE PRICE BID FOR "CONCRETE MEDIAN NOSE PAVING." DELINEATOR PAID FOR SEPARATELY. SEE SECTION 110.

CONCRETE MEDIAN NOSE DETAIL

NOTE:

WHEN OUTFLOW CURB IS SPECIFIED SLOPE WILL BE 3/8" PER FOOT



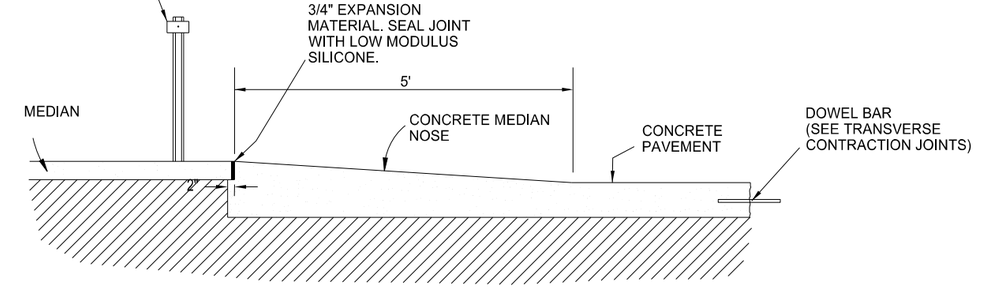
CURB & GUTTER SECTION

NOTES:

1. DIMENSION T SHALL MATCH THE THICKNESS OF THE ADJOINING CONCRETE.
2. SEE CURB & GUTTER PLAN VIEW DETAIL FOR CURB & GUTTER JOINTING AND REINFORCING.
3. PAID FOR AS: "CURB & GUTTER - TYPE I"

③ 1/2"x18" DEFORMED BARS AT 30" O.C. REQUIRED WHEN SEPARATE CURB IS INSTALLED WITH CONCRETE PAVING

MEDIAN CONCRETE AND LEDGE CURB & GUTTER



SECTION A-A

NOTE:

1. PAID AS "CONCRETE MEDIAN NOSE PAVING"

CONCRETE MEDIAN NOSE DETAIL

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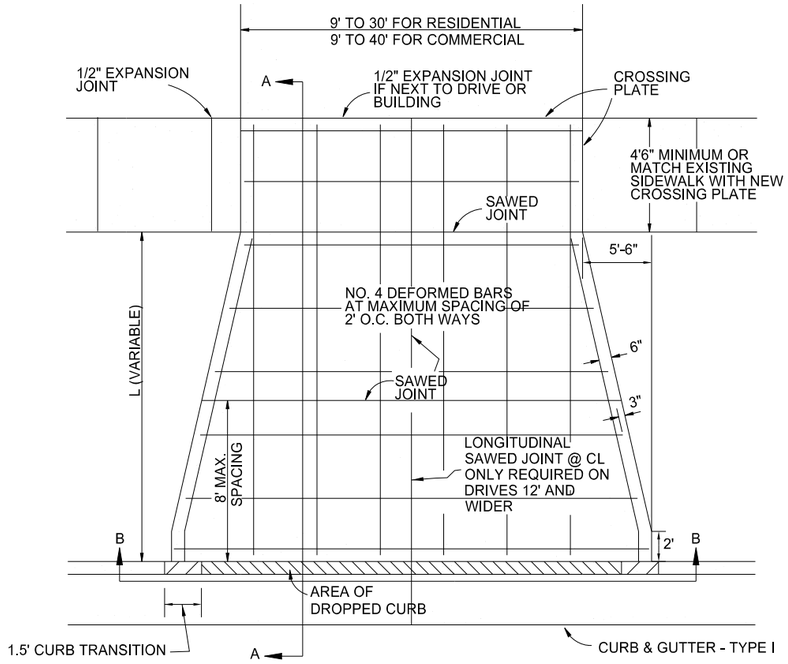
General Details

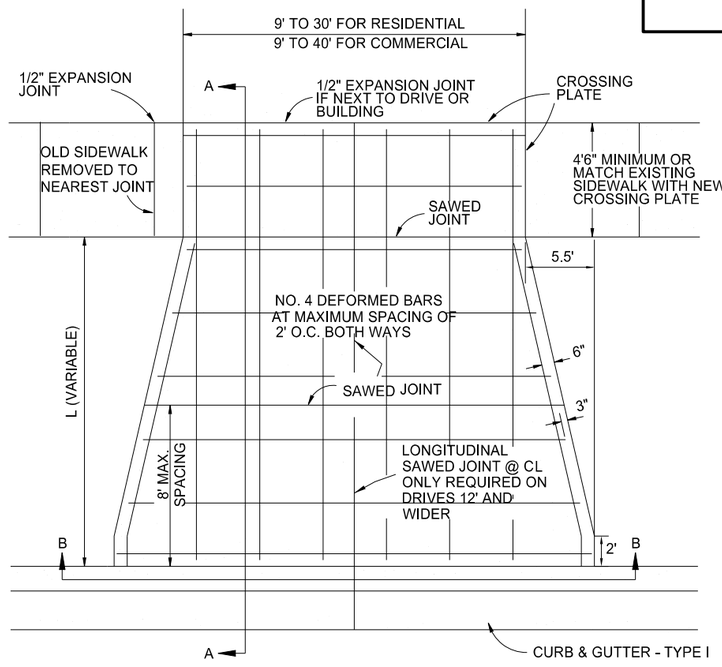
Median Concrete and Ledge Curb & Gutter
Concrete Median Nose Detail

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	27

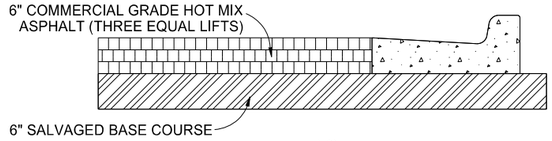
IM-8-029(166)062



PLAN VIEW

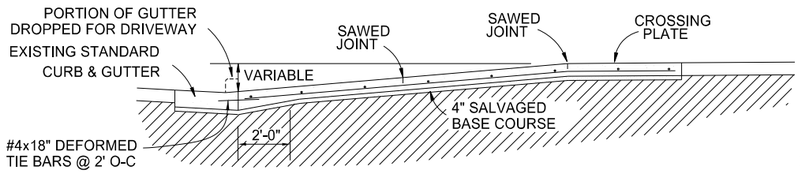


PLAN VIEW

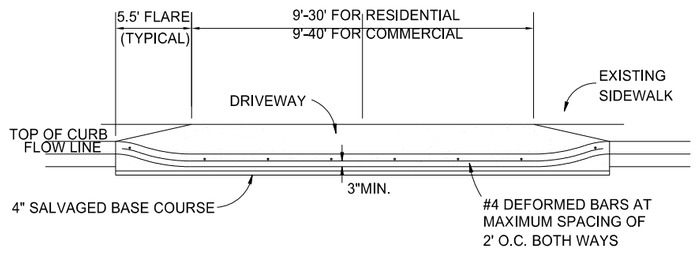


NOTE:
TACK COAT SHALL BE APPLIED TO INTERMEDIATE LIFTS AND ADJOINING FACE OF GUTTER.

PARKING LOT PAVING DETAIL

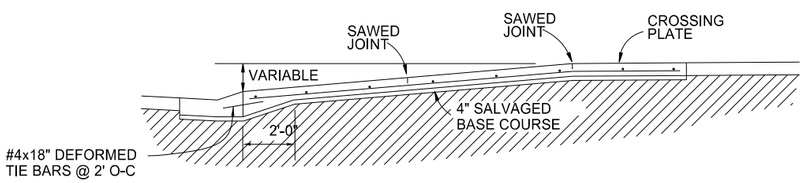


SECTION A-A

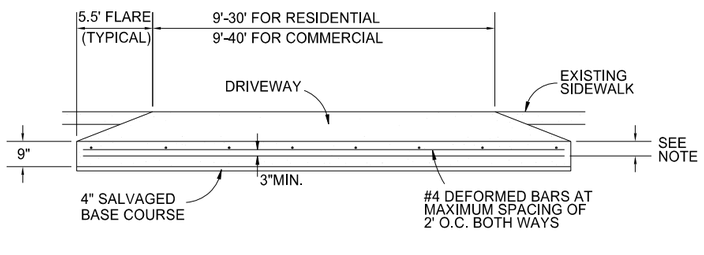


SECTION B-B

STANDARD PRIVATE DRIVE ABUTTING STANDARD CURB



SECTION A-A



SECTION B-B

STANDARD PRIVATE DRIVE ABUTTING MOUNTABLE CURB

NOTES:

1. MIN. THICKNESS OF DRIVEWAYS SHALL BE 8"
2. JOINT SPACINGS: THE DRIVEWAY LONGITUDINAL JOINT SPACING SHALL MATCH CURB AND GUTTER OR CONCRETE PAVEMENT JOINT SPACING. THE DRIVEWAY TRANSVERSE JOINT SPACING SHALL NOT EXCEED 8' SPACING.
3. SAW DEPTH: THICKNESS/4 + 1/4"

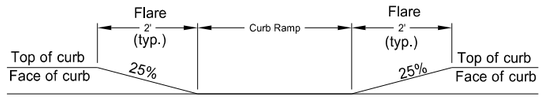
General Details

Driveways
Parking Lot Paving

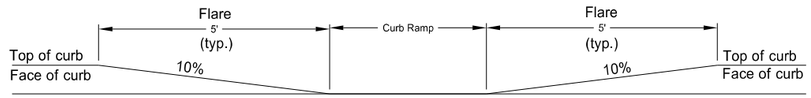
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	28

IM-8-029(166)062

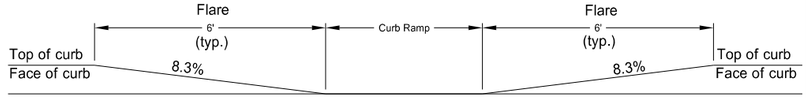
SIDEWALK/SHARED USE PATH DETAILS



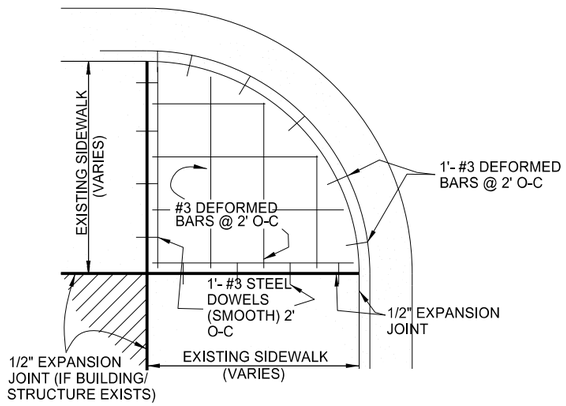
25% Flares



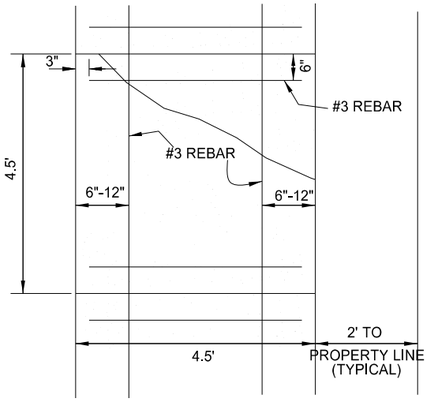
10% Flares



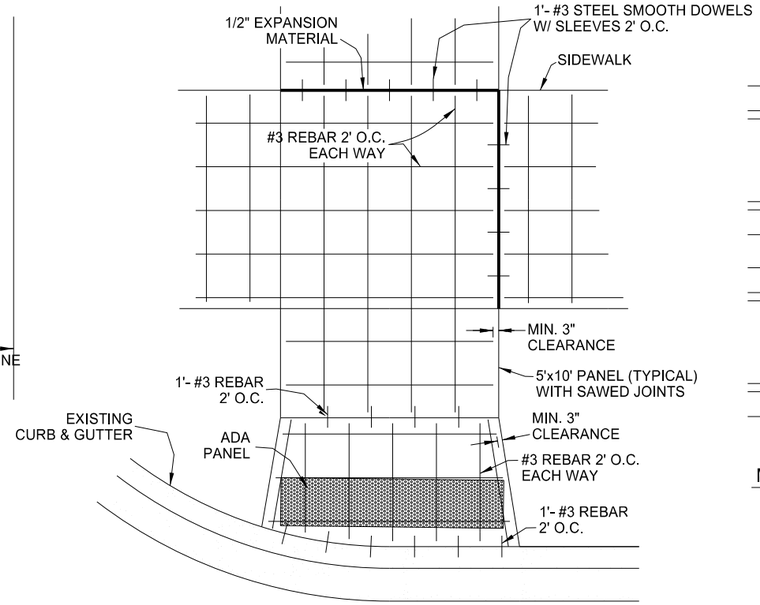
8.3% Flares



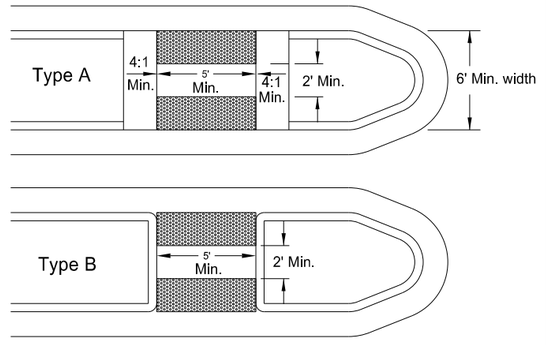
SIDEWALK REINFORCEMENT



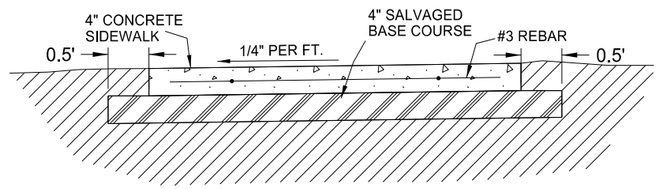
4.5' REINFORCEMENT



10' REINFORCEMENT



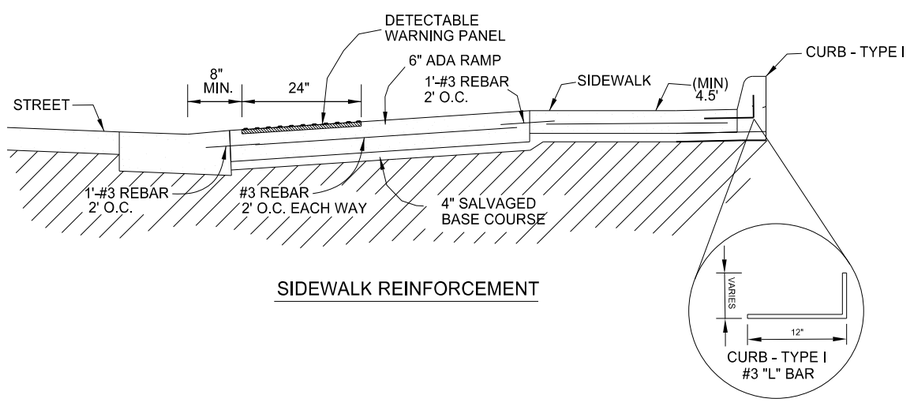
MEDIAN REFUGE ISLANDS (CUT-THROUGH)



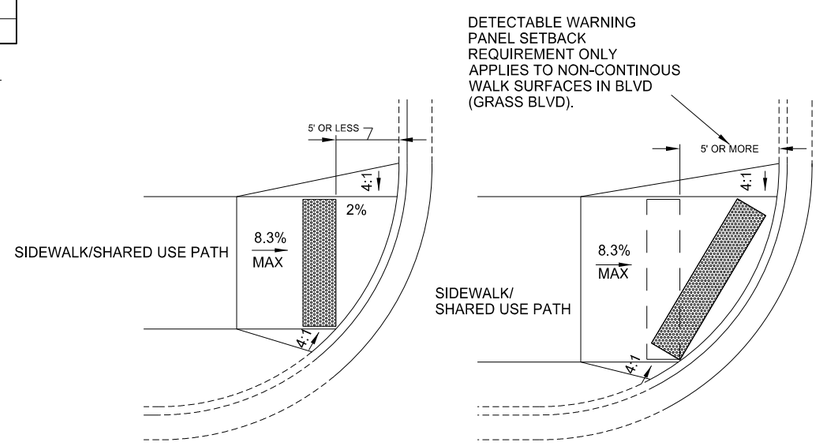
SIDEWALK CROSS-SECTION

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

JOINT DIMENSION



SIDEWALK REINFORCEMENT



CONCRETE APRON FOR SIDEWALK/SHARED USE PATH

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General Details

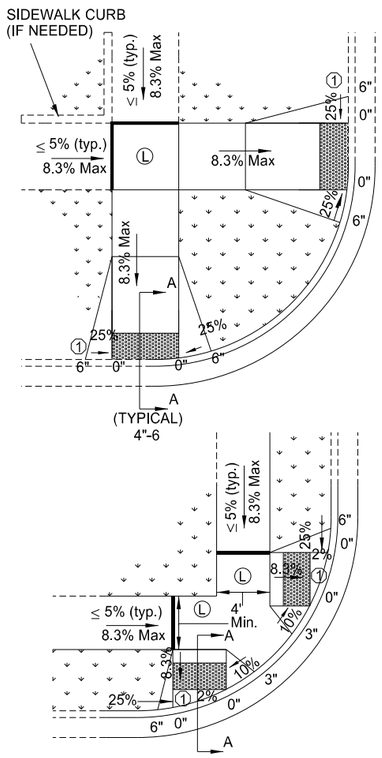
Sidewalk ADA Ramp Details

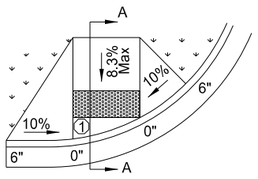
SIDEWALK RAMPS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	29

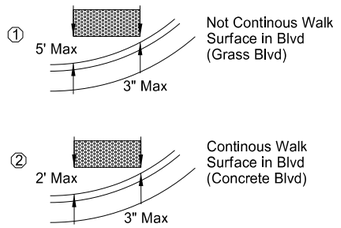
IM-8-029(166)062

TYPE A
GRASS BOULEVARD

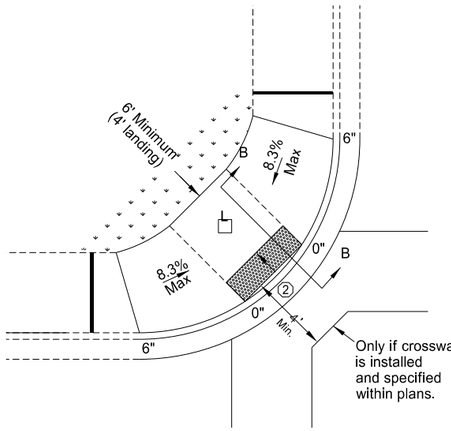


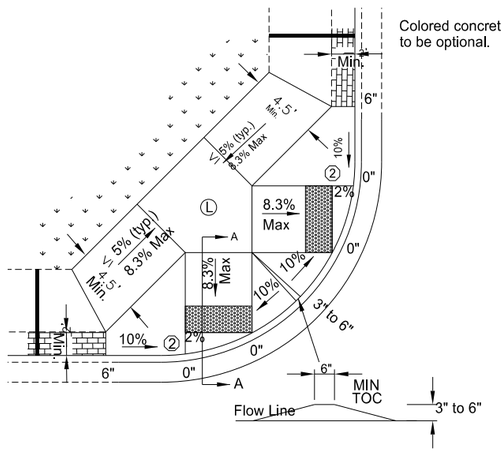


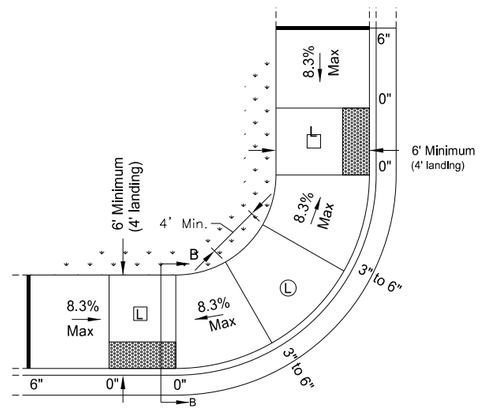
Alternative DWP



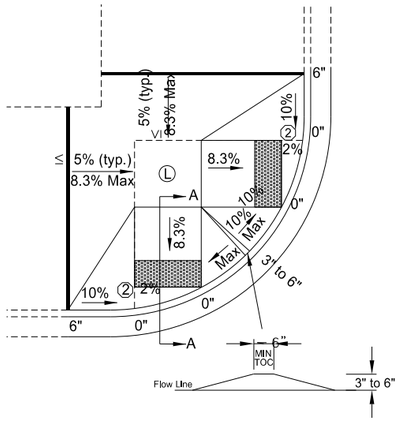
TYPE B
SIDEWALK ADJACENT TO STREET CURB

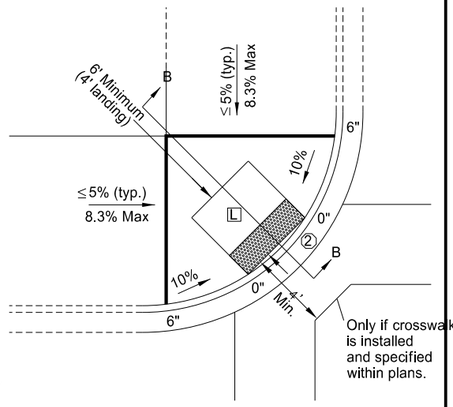


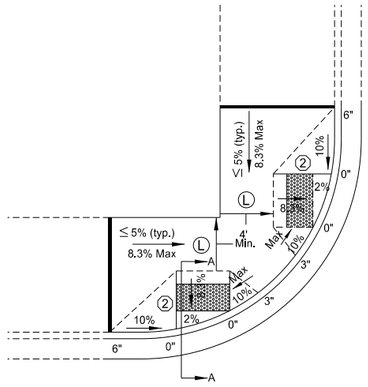




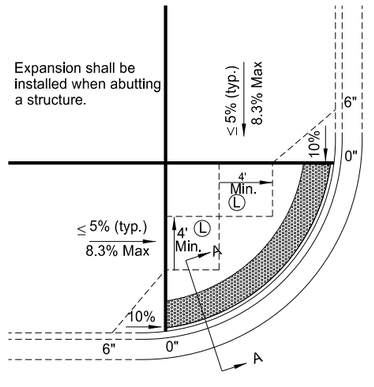
TYPE C
CONTINUOUS CONCTRETE IN BOULEVARD (TYPICALLY DOWNTOWN AREA)

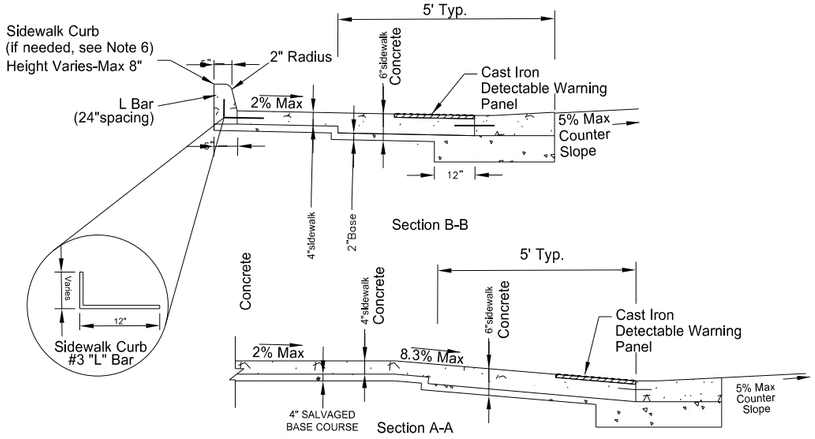






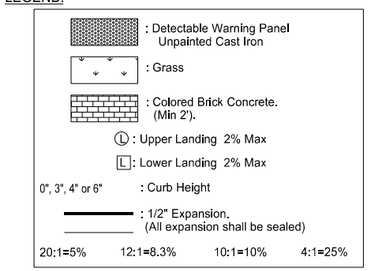
Expansion shall be installed when abutting a structure.





SIDEWALK RAMP CROSS-SECTION

LEGEND:



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% long. 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 I" 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.

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General Details

Sidewalk ADA Ramp Details

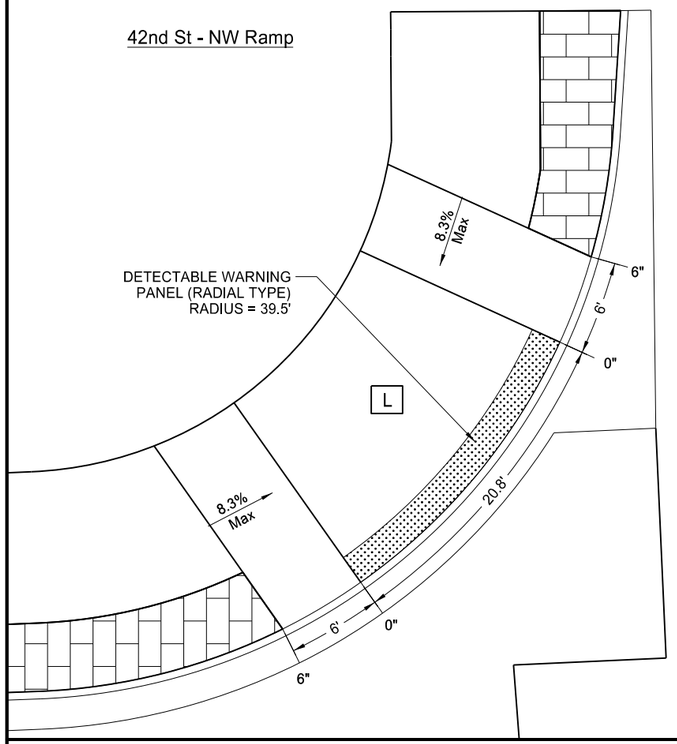
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	30

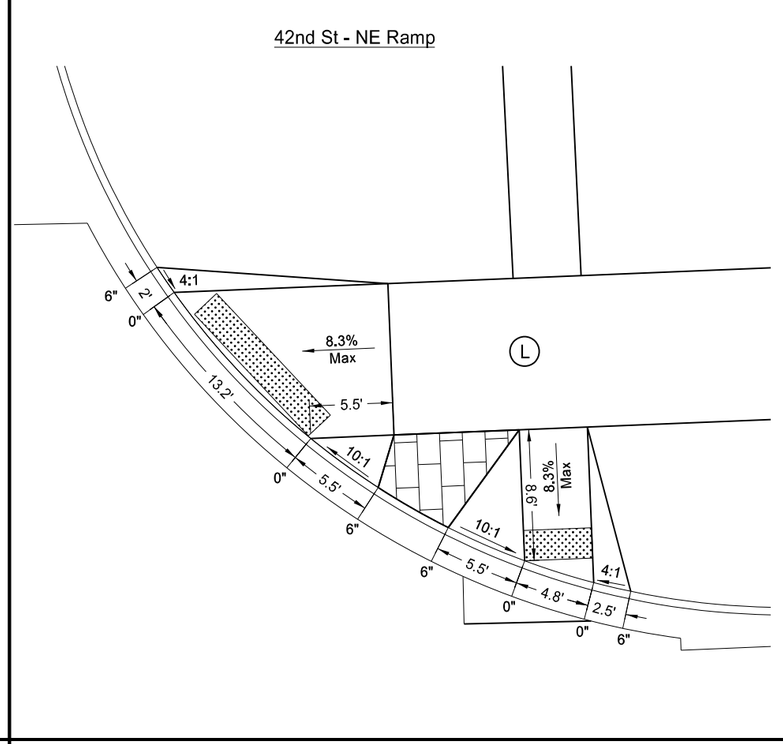
NOTES:

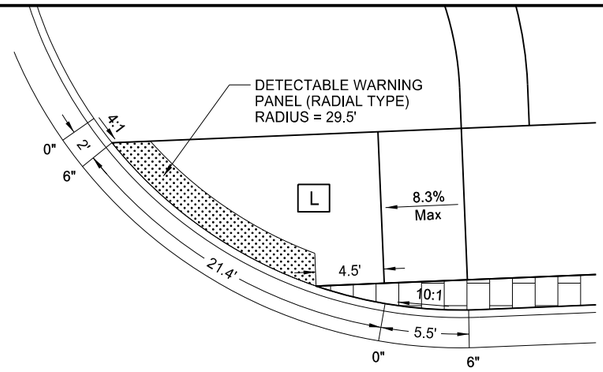
1. DIMENSIONS SHOWN ARE APPROXIMATE. ADJUST AS NECESSARY SO AS NOT TO EXCEED MAXIMUM GRADE.
2. SEE STANDARD DRAWING D-750-3 for ADDITIONAL INFORMATION.

LEGEND

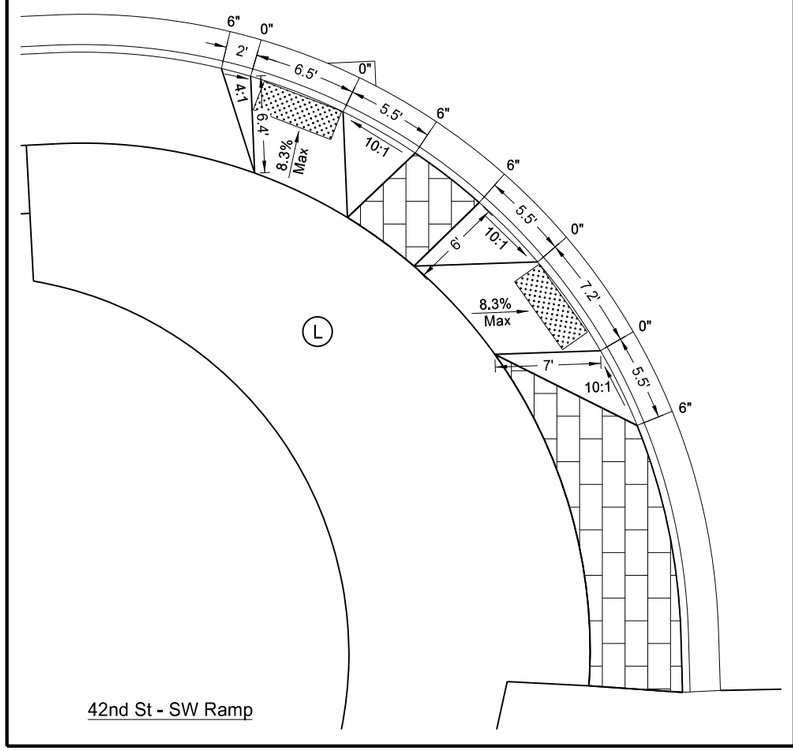
	Detectable Warning Panel
L	Upper Landing
L	Lower Landing
0" or 3" or 6"	Curb Height
8.3%	All Slopes shown are max grades. Flatter slopes may be used.

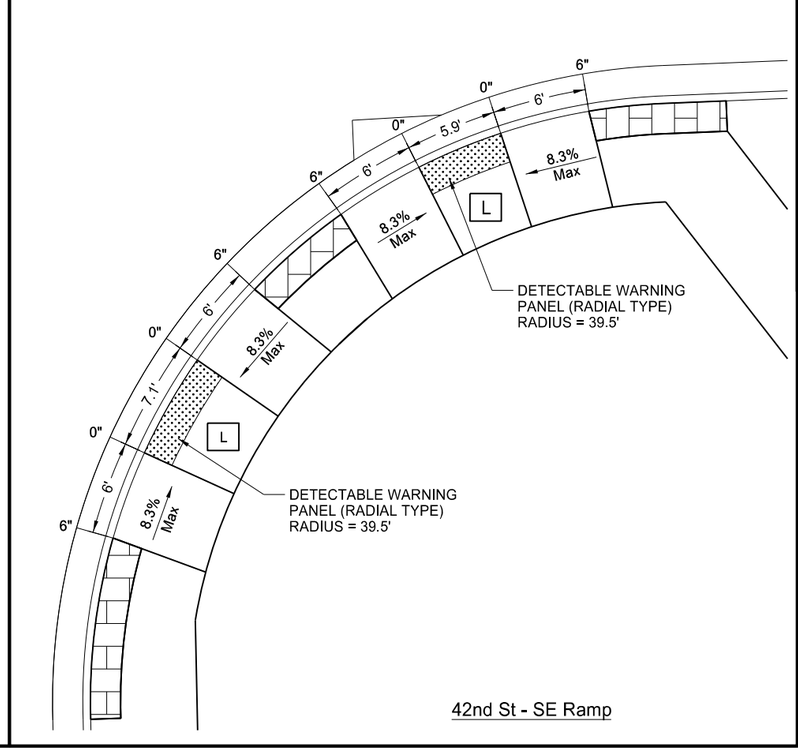


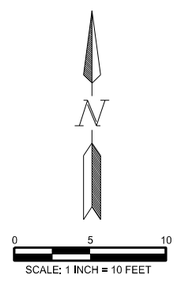




Sienna Dr - NE Ramp







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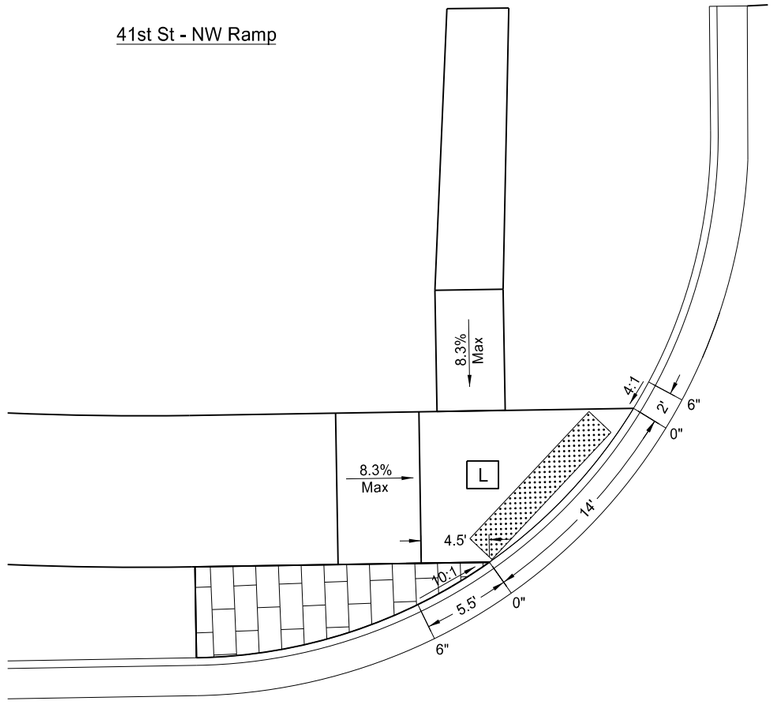
Curb Ramp Details

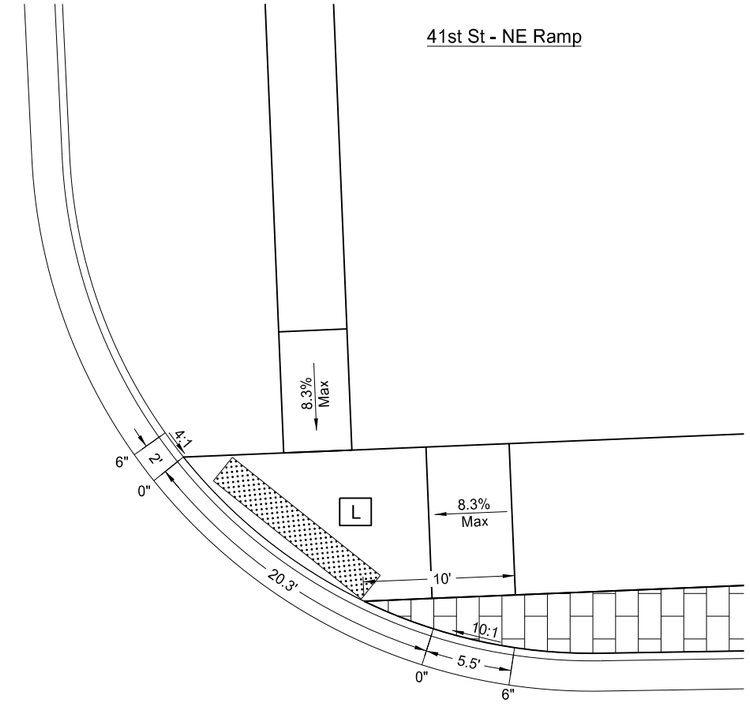
Sienna Drive S & 42nd Street S

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	31

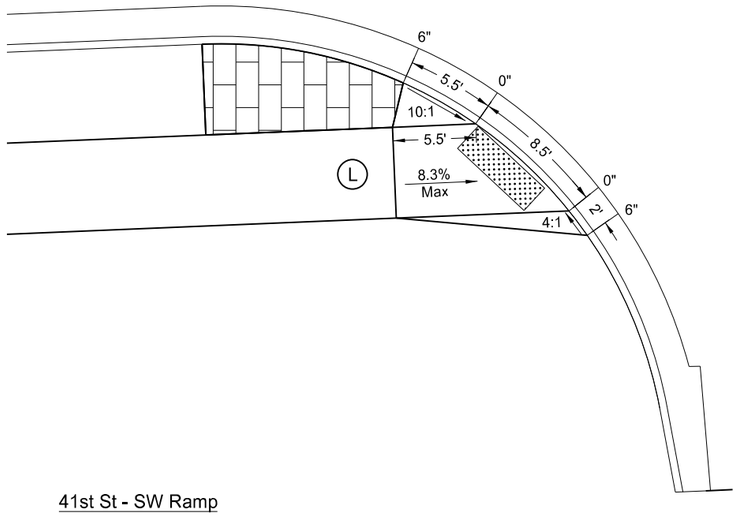
41st St - NW Ramp



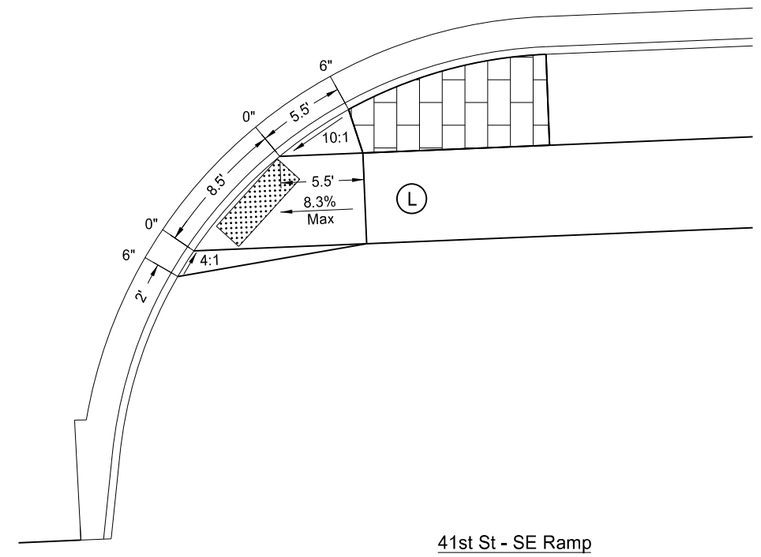
41st St - NE Ramp



41st St - SW Ramp



41st St - SE Ramp



NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. ADJUST AS NECESSARY SO AS NOT TO EXCEED MAXIMUM GRADE.
2. SEE STANDARD DRAWING D-750-3 for ADDITIONAL INFORMATION.

LEGEND

	Detectable Warning Panel
L	Upper Landing
L	Lower Landing
0" or 3" or 6"	Curb Height
8.3%	All Slopes shown are max grades. Flatter slopes may be used.

N

0 5 10
SCALE: 1 INCH = 10 FEET

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Curb Ramp Details

41st Street S

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	32

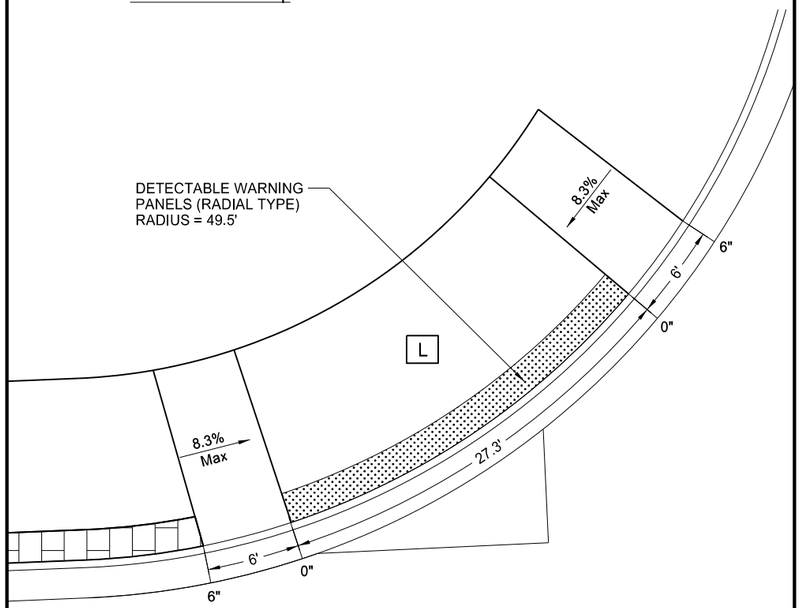
NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. ADJUST AS NECESSARY SO AS NOT TO EXCEED MAXIMUM GRADE.
2. SEE STANDARD DRAWING D-750-3 for ADDITIONAL INFORMATION.

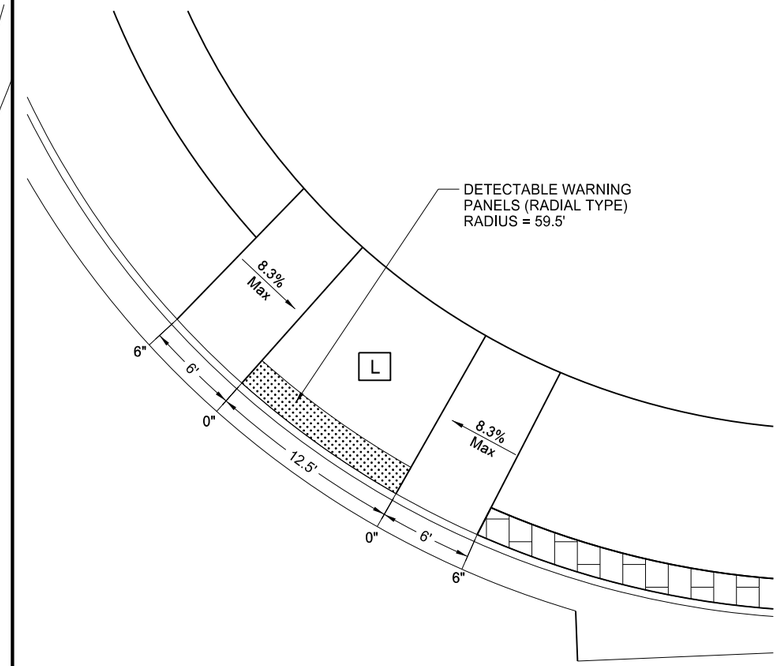
LEGEND

	Detectable Warning Panel
(L)	Upper Landing
[L]	Lower Landing
0" or 3" or 6"	Curb Height
8.3%	All Slopes shown are max grades. Flatter slopes may be used.

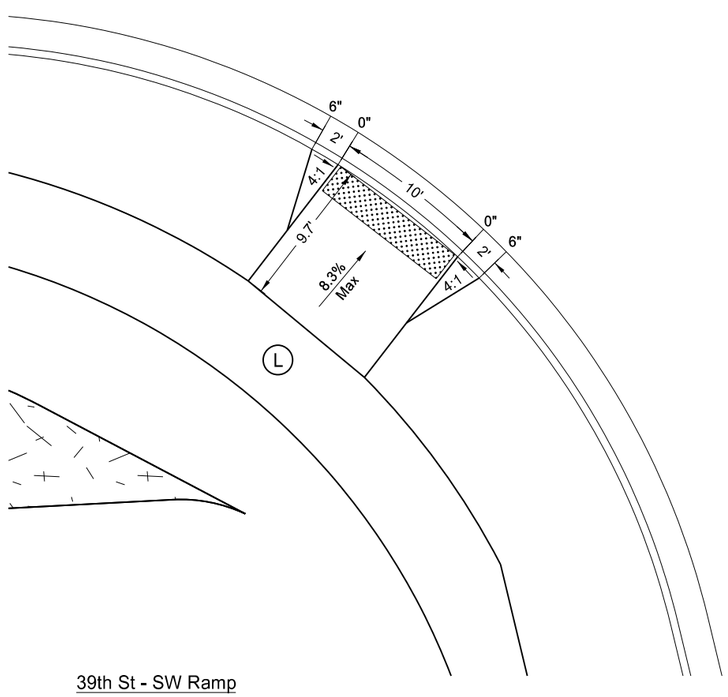
39th St - NW Ramp



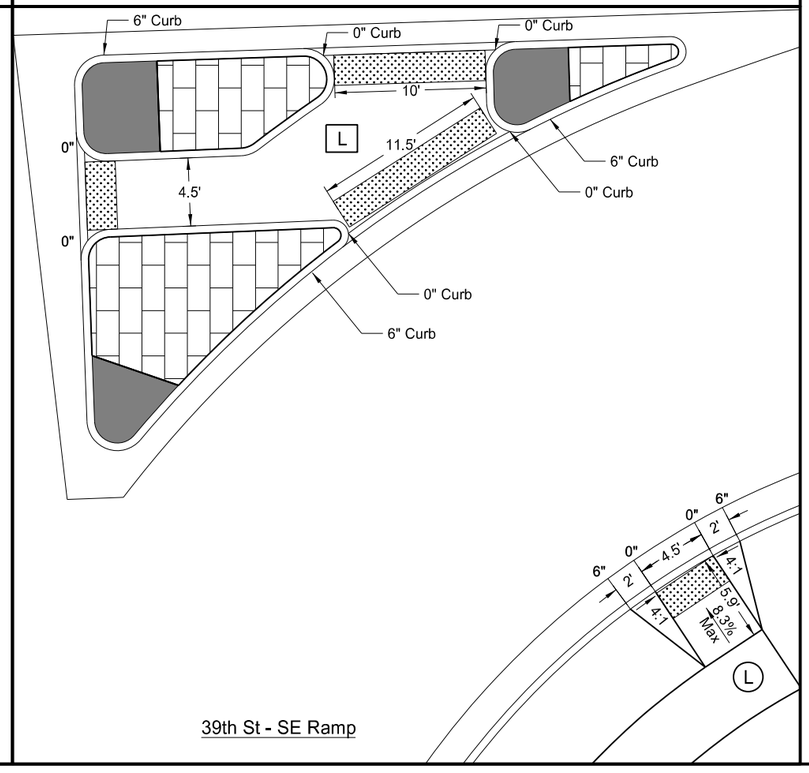
39th St - NE Ramp

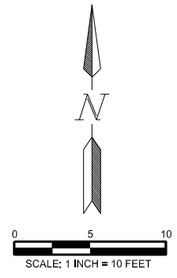


39th St - SW Ramp



39th St - SE Ramp





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Curb Ramp Details

39th Street S

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	20	33

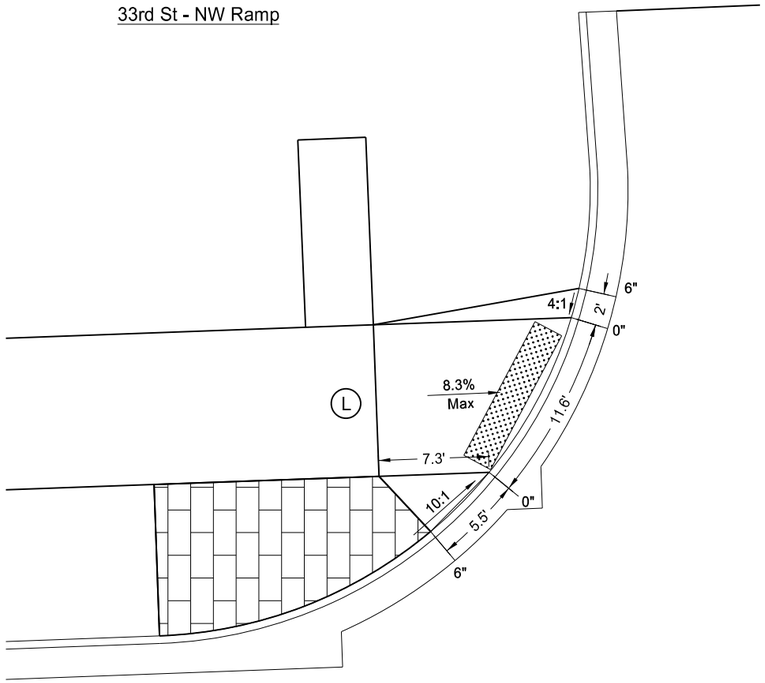
NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. ADJUST AS NECESSARY SO AS NOT TO EXCEED MAXIMUM GRADE.
2. SEE STANDARD DRAWING D-750-3 for ADDITIONAL INFORMATION.

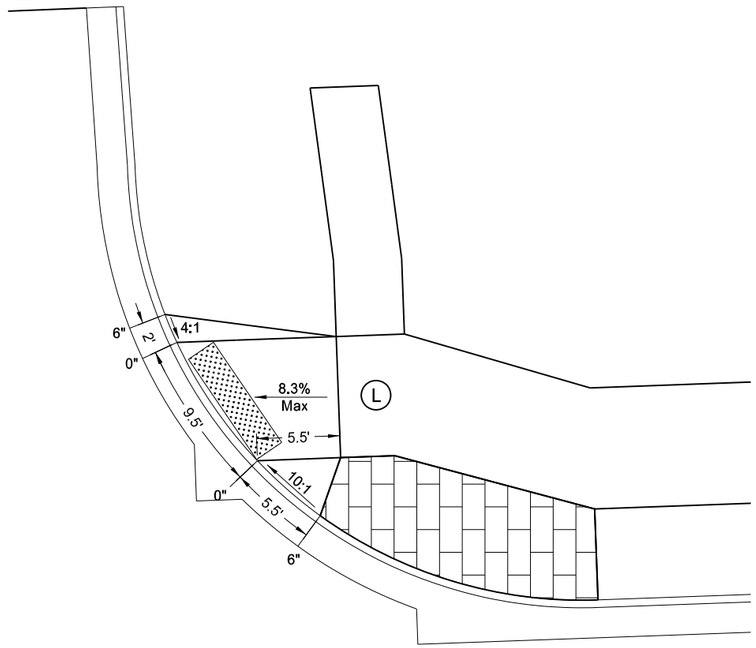
LEGEND

	Detectable Warning Panel
(L)	Upper Landing
[L]	Lower Landing
0" or 3" or 6"	Curb Height
8.3%	All Slopes shown are max grades. Flatter slopes may be used.

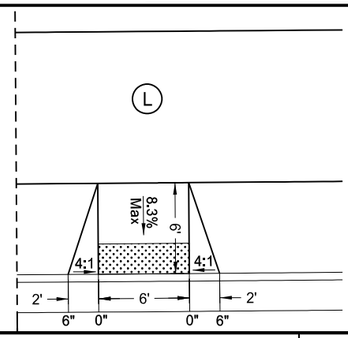
33rd St - NW Ramp



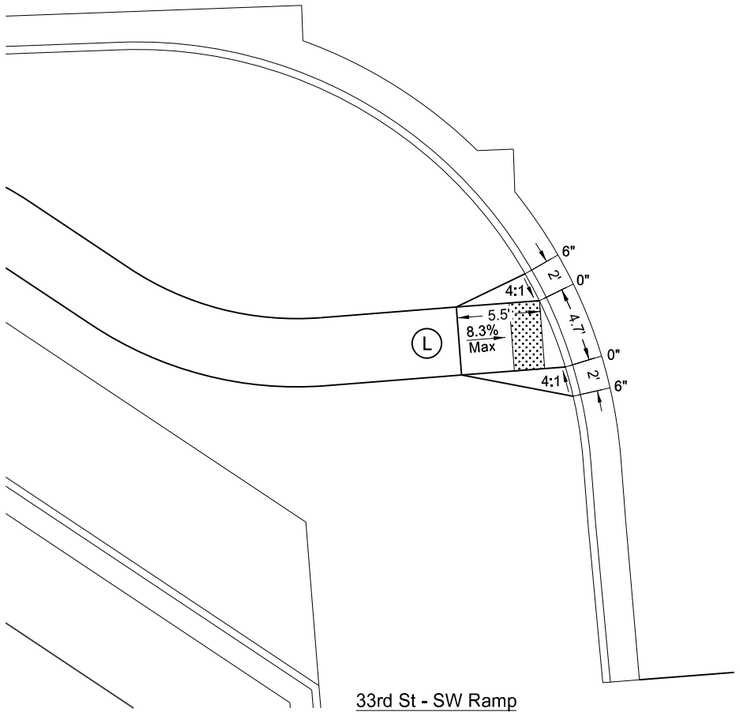
33rd St - NE Ramp



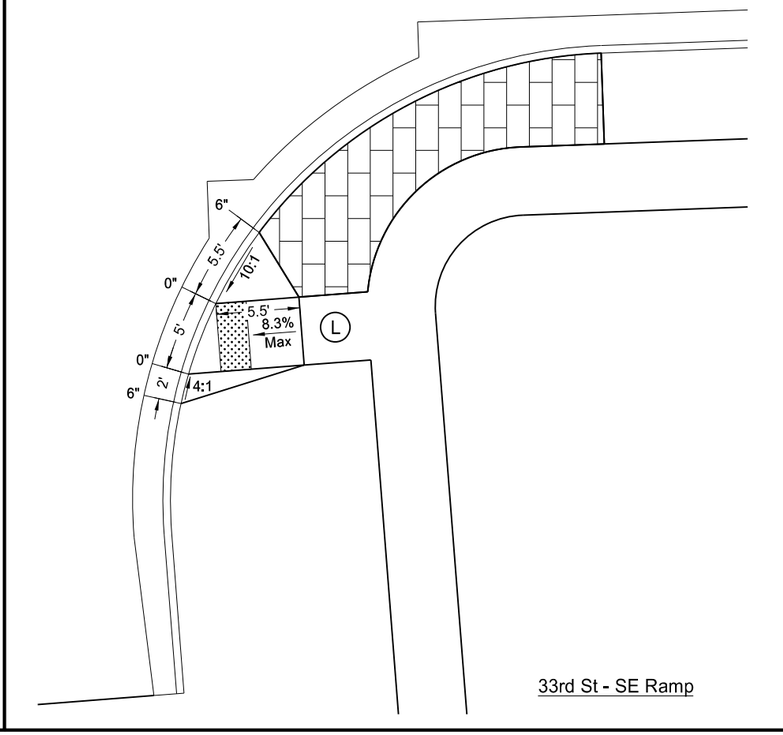
36th St - NE Ramp



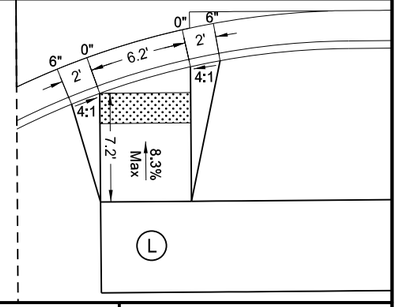
33rd St - SW Ramp



33rd St - SE Ramp



36th St - SE Ramp



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N

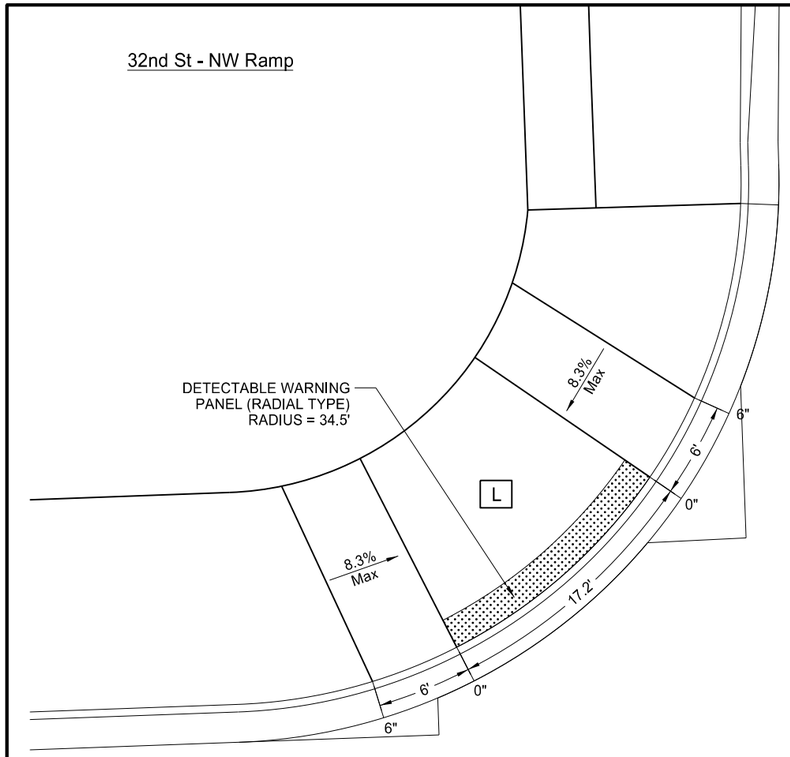
0 5 10
SCALE: 1 INCH = 10 FEET

Curb Ramp Details

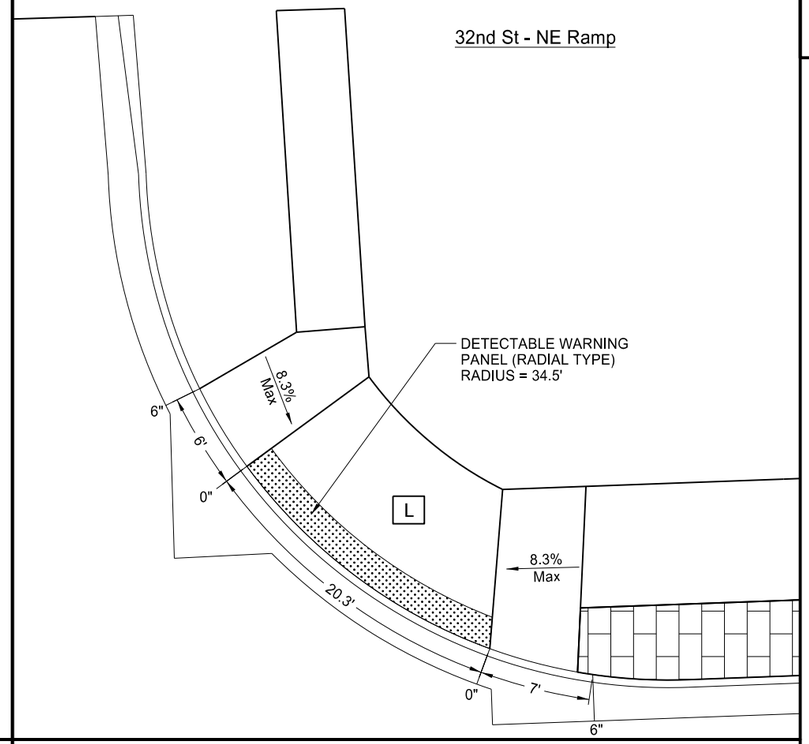
36th Street S & 33rd Street S

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	20	34

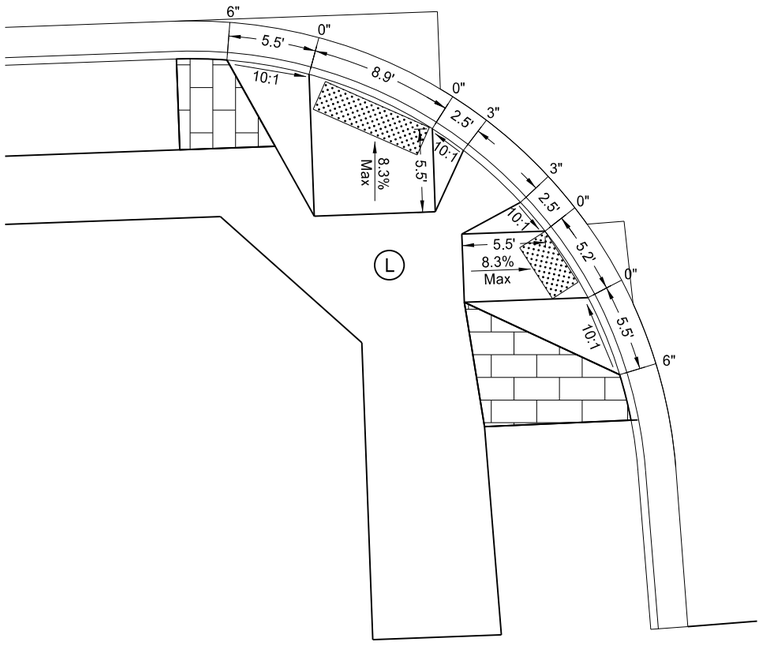
32nd St - NW Ramp



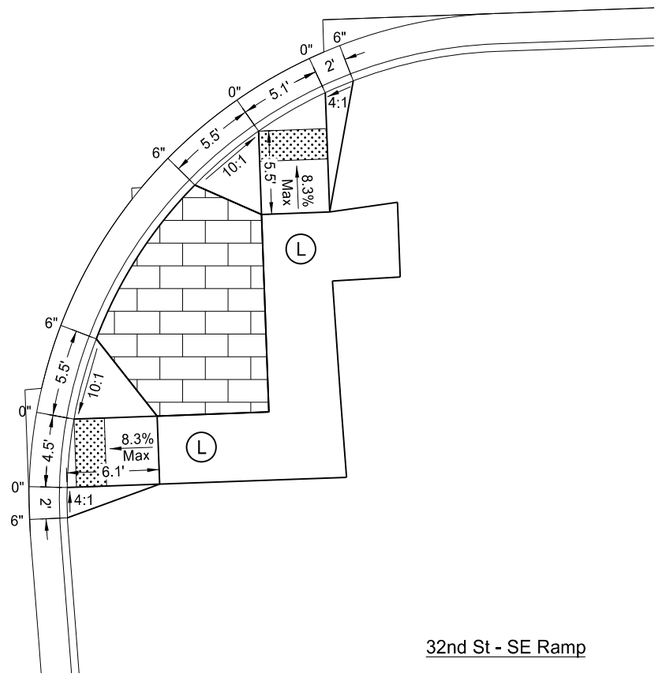
32nd St - NE Ramp



32nd St - SW Ramp



32nd St - SE Ramp



NOTES:

1. DIMENSIONS SHOWN ARE APPROXIMATE. ADJUST AS NECESSARY SO AS NOT TO EXCEED MAXIMUM GRADE.
2. SEE STANDARD DRAWING D-750-3 for ADDITIONAL INFORMATION.

LEGEND

	Detectable Warning Panel
L	Upper Landing
L	Lower Landing
0" or 3" or 6"	Curb Height
8.3%	All Slopes shown are max grades. Flatter slopes may be used.

N

0 5 10

SCALE: 1 INCH = 10 FEET

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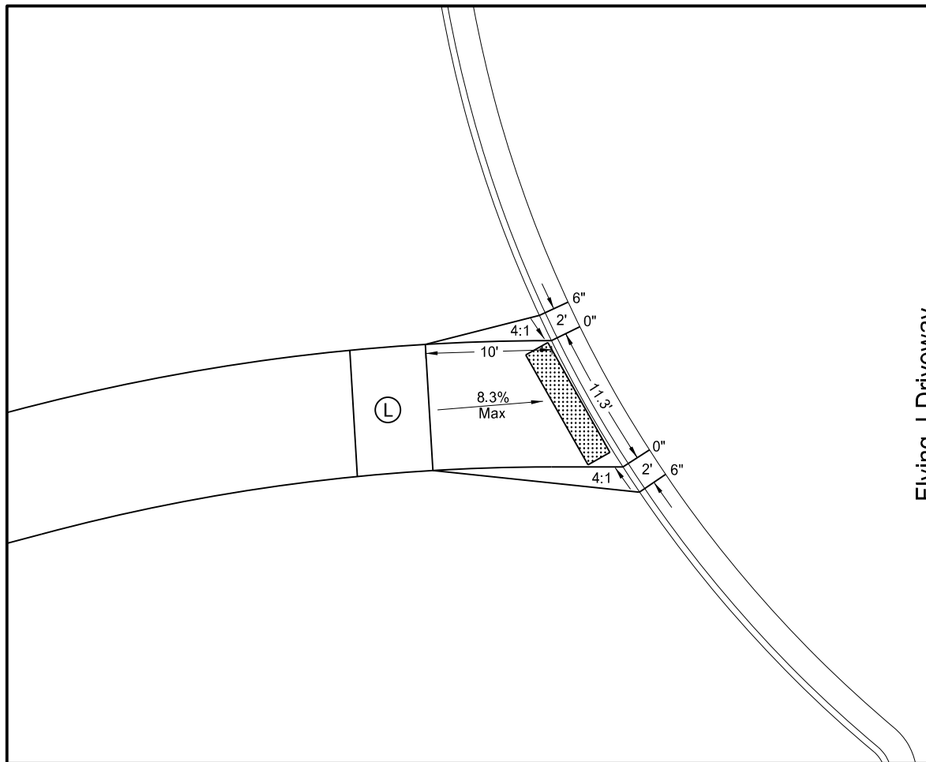
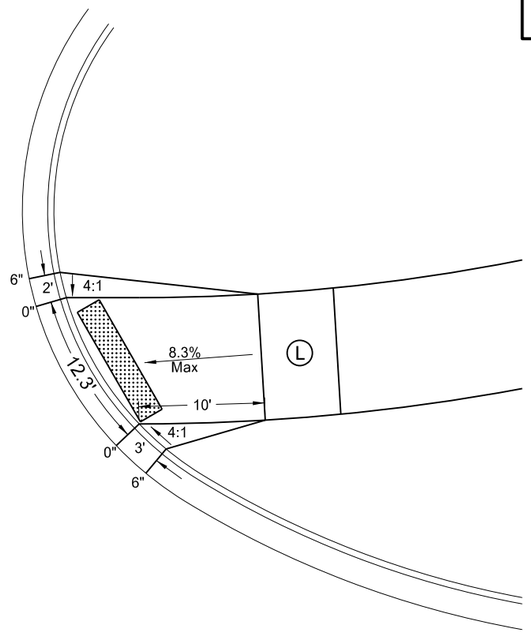
Curb Ramp Details

32nd Street S

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	35



Flying J Driveway



Notes:
-Dimensions shown are approximate. Adjust as necessary so as not to exceed maximum grades.

-See Standard Drawing D-750-3 for additional information.

LEGEND

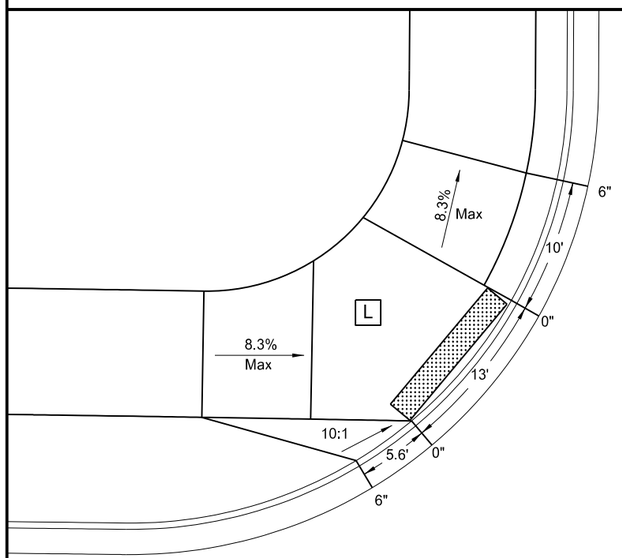
: Detectable Warning Panel

(L) : Upper Landing

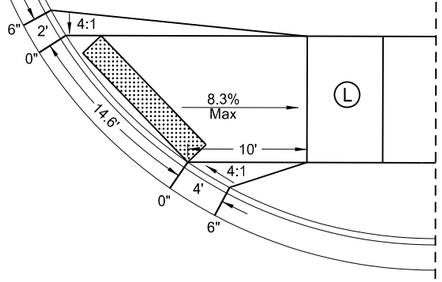
[L] : Lower Landing

0" or 6" : Curb Height

8.3% : All Slopes shown are max grades. Flatter slopes may be used



36th Street SW



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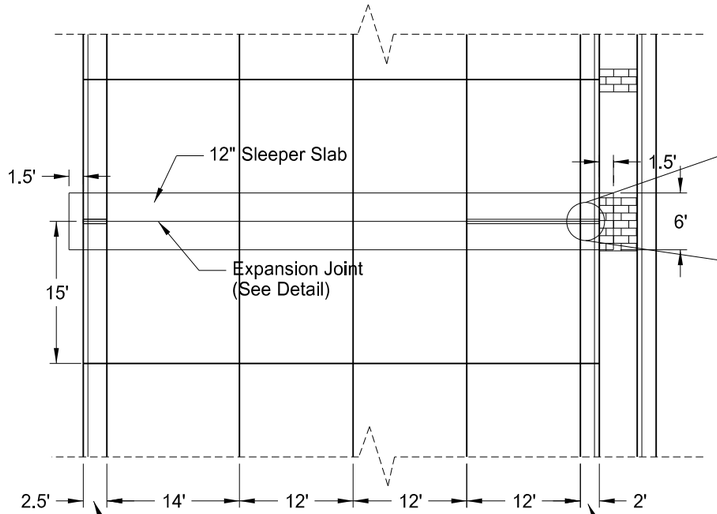
Curb Ramp Details

32nd Avenue South Interchange

11/16/2016 8:38:23 AM jrensch R:\project\80029062.166\design\Sheets\020GD_001_Curb_Ramp.dgn

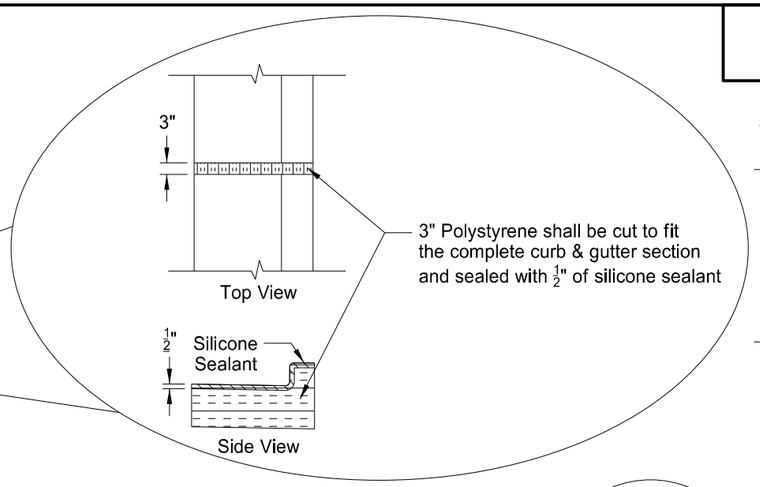
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	36



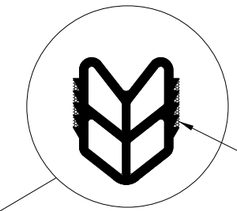
Sleeper Slab Detail
Top View

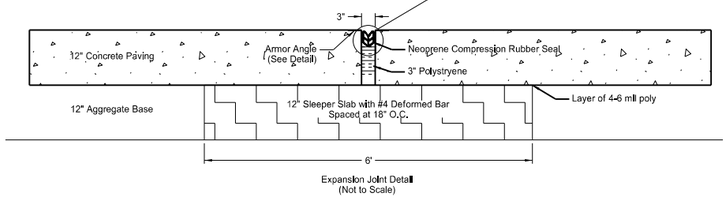
Outside Curb and Gutter

Median Curb and Gutter



Spec	Code	Bid Item	Unit	Quantity
930	8670	CONCRETE SLEEPER SLAB		
		West of Structure - Sta 126+13.18 Lt (57' x 6')	EA	1
		West of Structure - Sta 126+13.18 Rt (57' x 6')	EA	1
		East of Structure - Sta 129+88.18 Lt (57' x 6')	EA	1
		East of Structure - Sta 129+88.18 Rt (57' x 6')	EA	1
		Total	EA	4
930	8700	3 IN EXPANSION JOINT		
		West of Structure - Sta 126+13.18 Lt	LF	54.33
		West of Structure - Sta 126+13.18 Rt	LF	54.16
		East of Structure - Sta 129+88.18 Lt	LF	53.27
		East of Structure - Sta 129+88.18 Rt	LF	54.47
		Total	LF	216.23

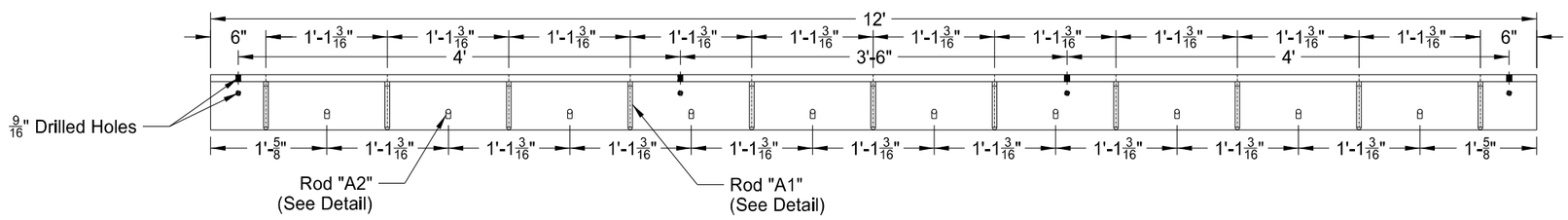


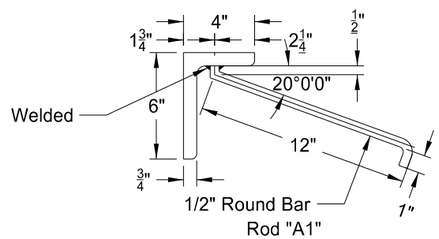


Expansion Joint Detail
(Not to Scale)

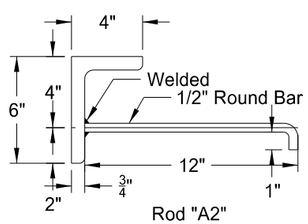
3 IN Expansion Joint Notes:

1. Neoprene compression joint seal shall be a: Watson Bowman Acme Jeene Model Number 75W, D.S. Brown Model Number JP300, or approved equal. The joint seal shall be installed the entire width of pavement to face of curbs.
2. Adjacent median concrete shall have 3" expansion material installed and sealed $\frac{1}{2}$" with silicone sealant.
3. The armor angles shall be hot-dipped galvanized.
4. Splice ends shall be welded together.
5. Include the cost for labor and materials to complete this work in the price bid for "3 IN Expansion Joint".

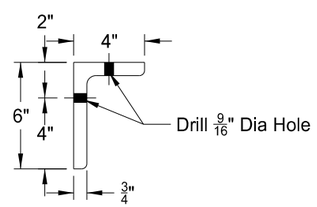




Rod "A1"
(Not to Scale)
L6"x4"x$\frac{3}{4}$" Angle



Rod "A2"
(Not to Scale)
L6"x4"x$\frac{3}{4}$" Angle



$\frac{9}{16}$" Drilled Holes
(Not to Scale)
L6"x4"x$\frac{3}{4}$" Angle

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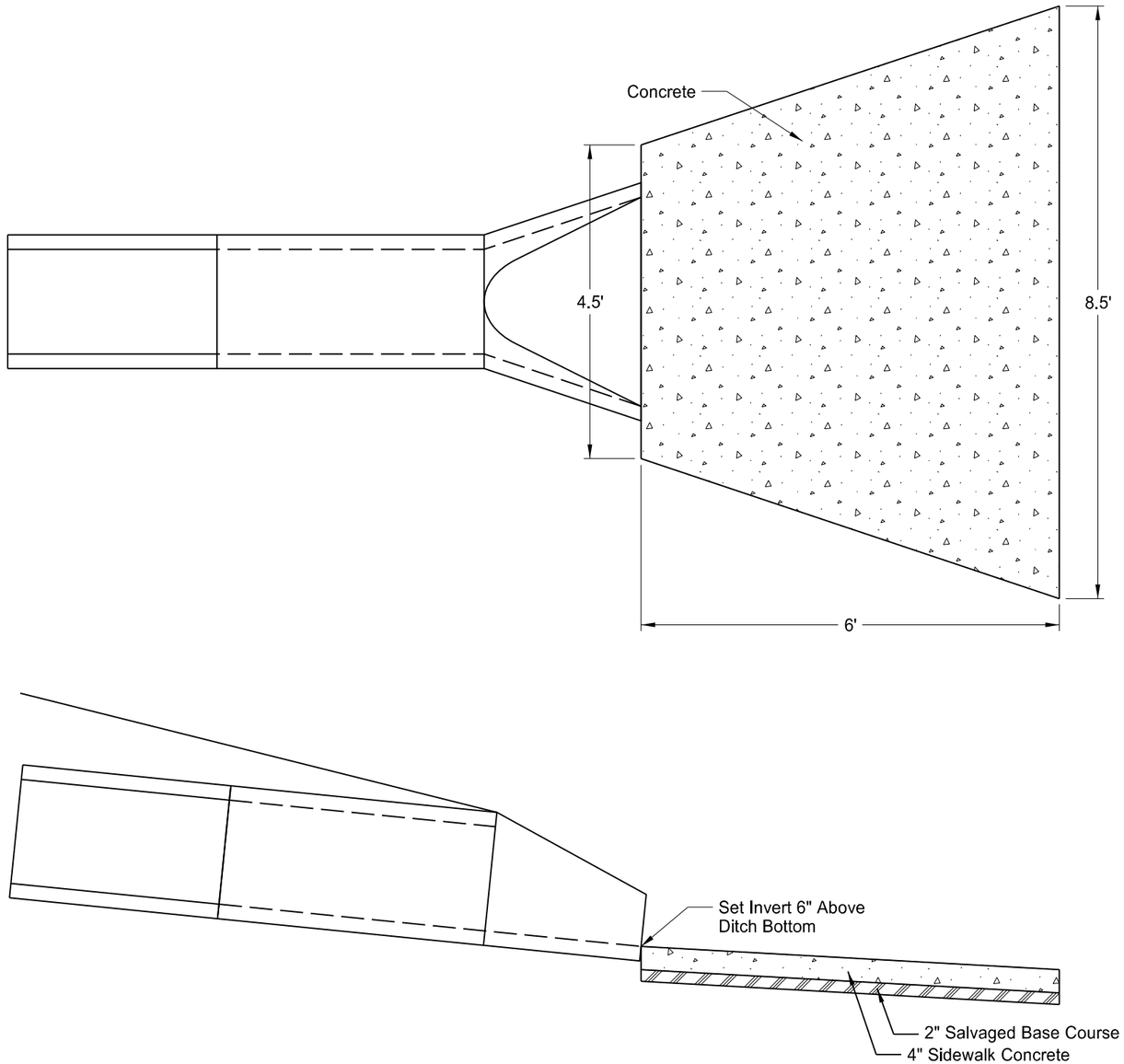
Expansion Joint Detail

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	37



Notes:
1. Two inches of salvaged base material to be used and included in the price bid for Sidewalk Concrete 4IN".
2. Include costs for labor, equipment, and material necessary to construct concrete apron in the price bid for "Sidewalk Concrete 4IN".
3. See Sec 77 Permanent Erosion Control Sheets for locations and quantities.

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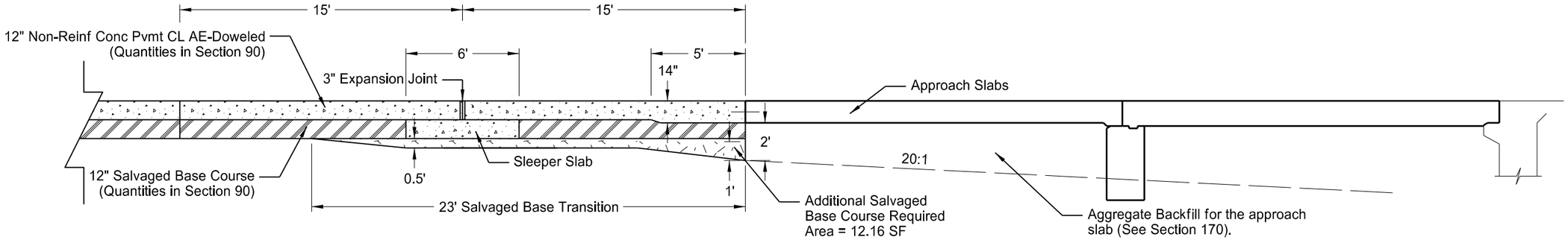
Concrete Apron Detail

32nd Avenue South

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	38

Spec	Code	Bid Item	Unit	Quantity
302	0101	SALVAGED BASE COURSE		
		Additional Material Required		
		West of Structure (115' Width)	CY	52
		East of Structure (115' Width)	CY	52



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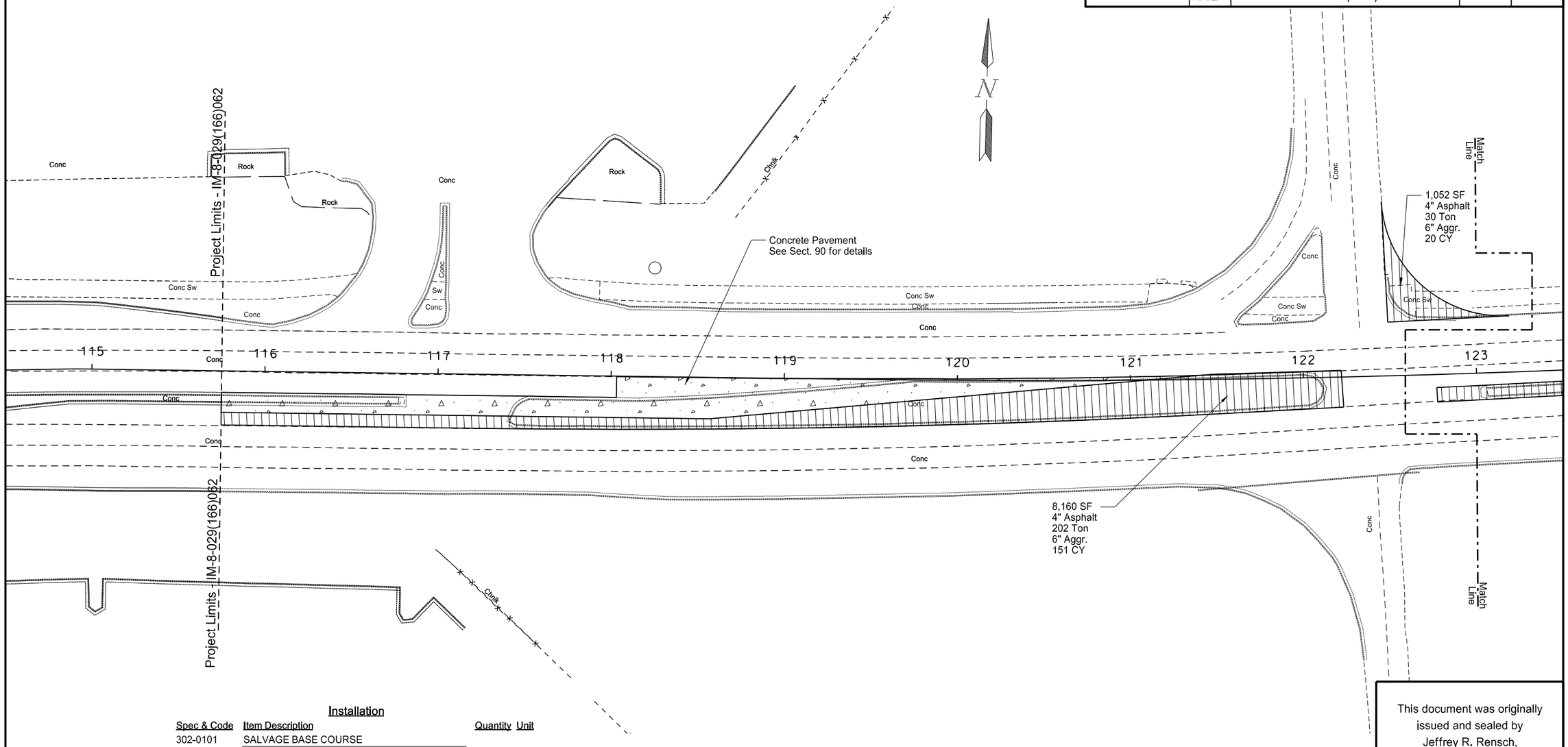
Backfill Detail
Structure Approach Slab

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	39



Installation

Spec & Code	Item Description	Quantity	Unit
302-0101	SALVAGE BASE COURSE		
	Temporary Surfacing	171	CY
430-0500	COMMERCIAL GRADE HOT MIX ASPHALT		
	Temporary Surfacing	232	TON

Removal

Spec & Code	Item Description	Quantity	Unit
202-0136	REMOVAL OF PAVEMENT		
	Bituminous Only	232	TON

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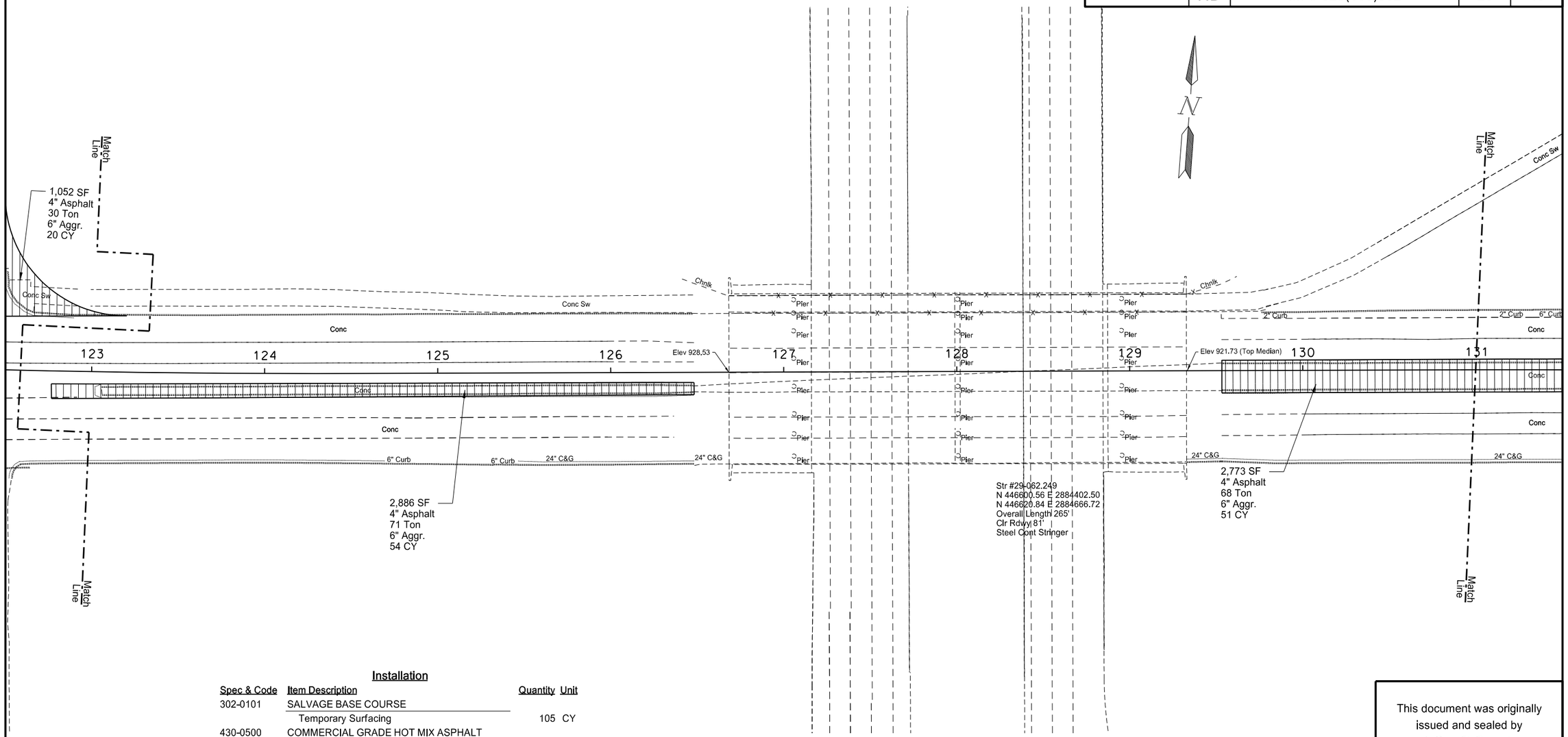
WZTC Paving Details

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	40



Installation

Spec & Code	Item Description	Quantity	Unit
302-0101	SALVAGE BASE COURSE		
	Temporary Surfacing	105	CY
430-0500	COMMERCIAL GRADE HOT MIX ASPHALT		
	Temporary Surfacing	139	TON

Removal

Spec & Code	Item Description	Quantity	Unit
202-0136	REMOVAL OF PAVEMENT		
	Bituminous Only	139	TON

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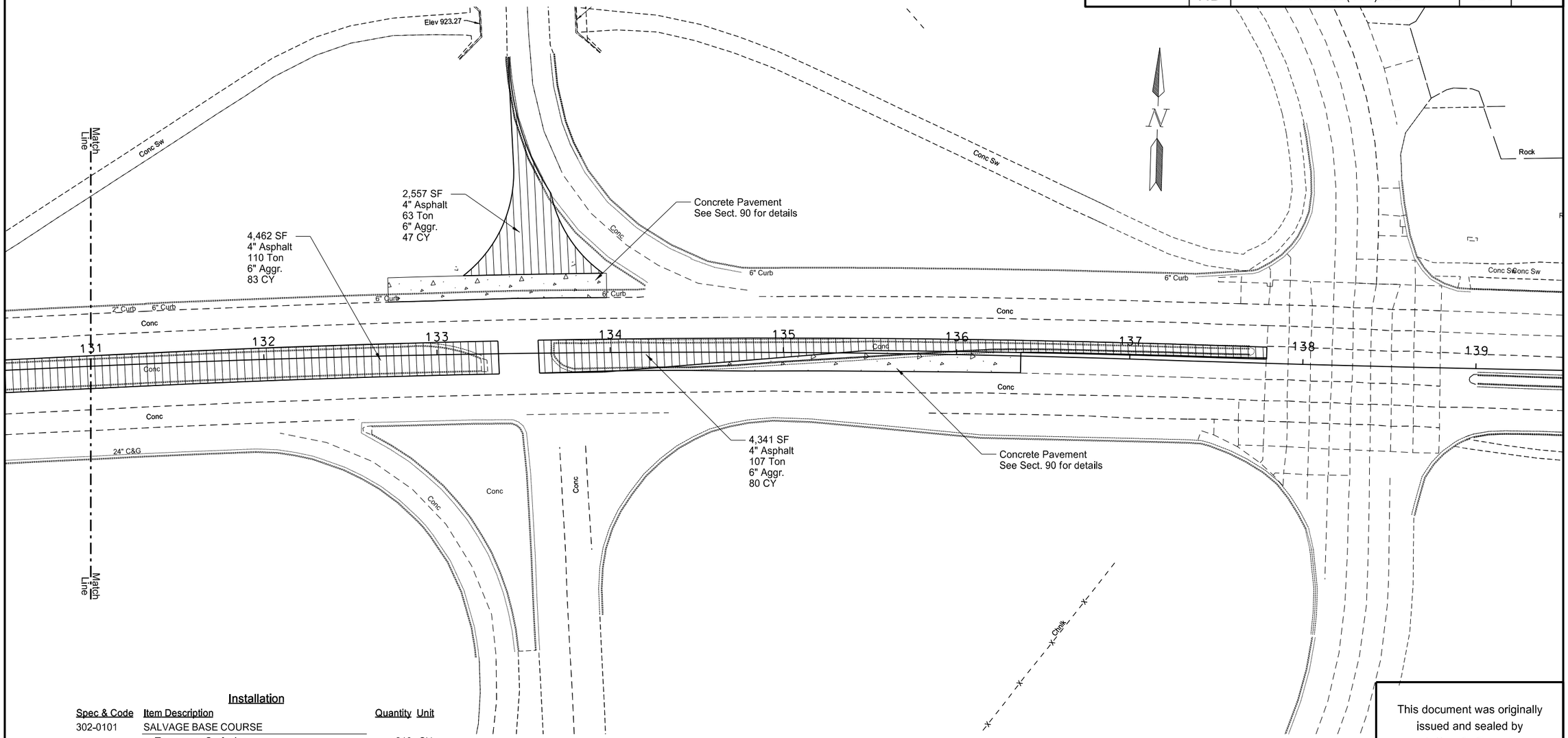
WZTC Paving Details

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	41



Installation

Spec & Code	Item Description	Quantity	Unit
302-0101	SALVAGE BASE COURSE		
	Temporary Surfacing	210	CY
430-0500	COMMERCIAL GRADE HOT MIX ASPHALT		
	Temporary Surfacing	280	TON

Removal

Spec & Code	Item Description	Quantity	Unit
202-0136	REMOVAL OF PAVEMENT		
	Bituminous Only	280	TON

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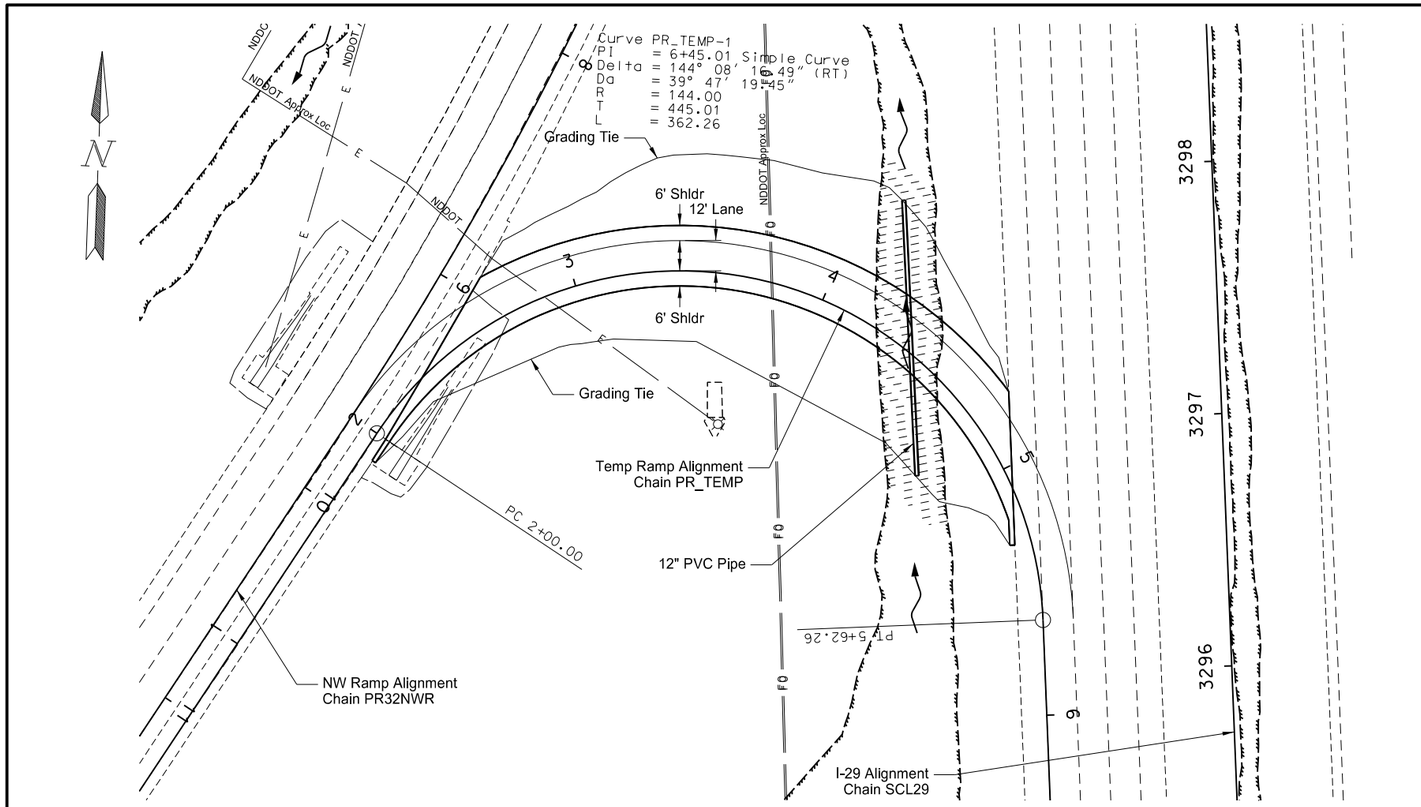
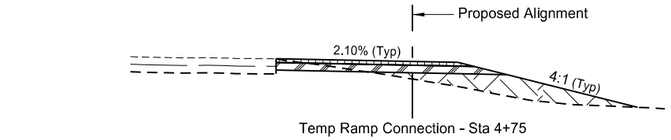
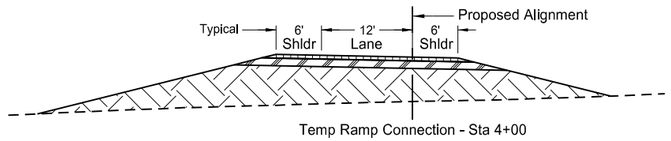
WZTC Paving Details

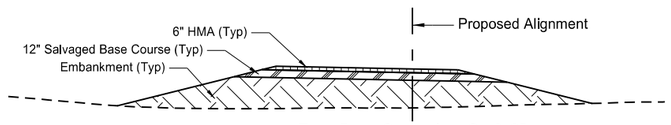
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	42

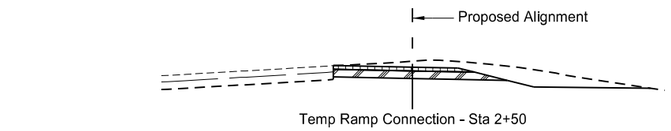


SPEC	CODE	BID ITEM	QUANTITY	UNIT
203	0140	BORROW-EXCAVATION		
		Temp Ramp Connection	1654	CY
302	0101	SALVAGED BASE COURSE		
		Temp Ramp Connection	367	CY
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Temp Ramp Connection	257	TON
710	0410	REMOVAL OF TEMP CONNECTION		
		Temp Ramp Connection (Includes Embankment, SBC, HMA & Pipe)	1	EA
714	7030	PIPE PVC 12IN		
		Temp Ramp Connection	110	LF









Beginning chain PR TEMP description
==========
Point 8990 N 447,013.1312 E 2,884,049.9139 Sta 0+00.00
Course from 8990 to PC PR TEMP-1 N 31° 25' 59.12" E Dist 200.0000
Curve Data

Curve PR TEMP-1
P.I. Station 6+45.01 N 447,563.4841 E 2,884,386.2872
Delta = 144° 08' 16.49" (RT)
Degree = 39° 47' 19.45"
Tangent = 445.0081
Length = 362.2581
Radius = 144.0000
External = 323.7266
Long Chord = 274.0112
Mid. Ord. = 99.6664
P.C. Station 2+00.00 N 447,183.7811 E 2,884,154.2144
P.T. Station 5+62.26 N 447,119.8050 E 2,884,420.6524
C.C. N 447,108.6848 E 2,884,277.0824
Back = N 31° 25' 59.12" E
Ahead = S 4° 25' 44.39" E
Chord Bear = S 76° 29' 52.63" E
Course from PT PR TEMP-1 to 8991 S 4° 25' 44.39" E Dist 200.0000
Point 8991 N 446,920.4022 E 2,884,436.0971 Sta 7+62.26
==========
Ending chain PR TEMP description

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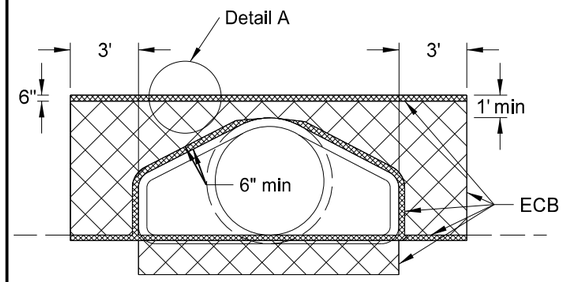
WZTC Paving Details

Temporary Ramp Connection

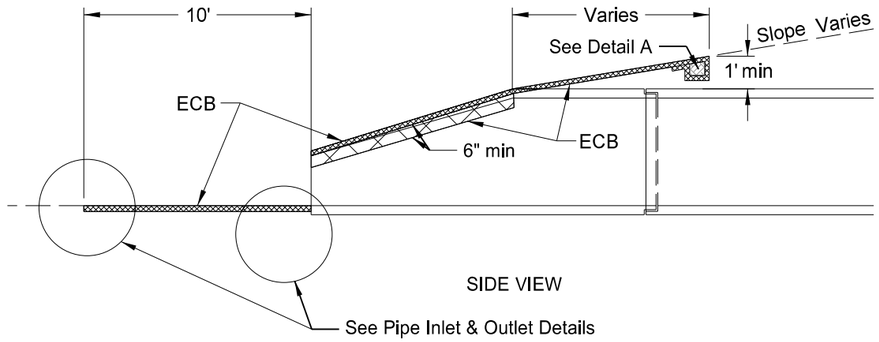
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	20	43

SU-8-984(152)155

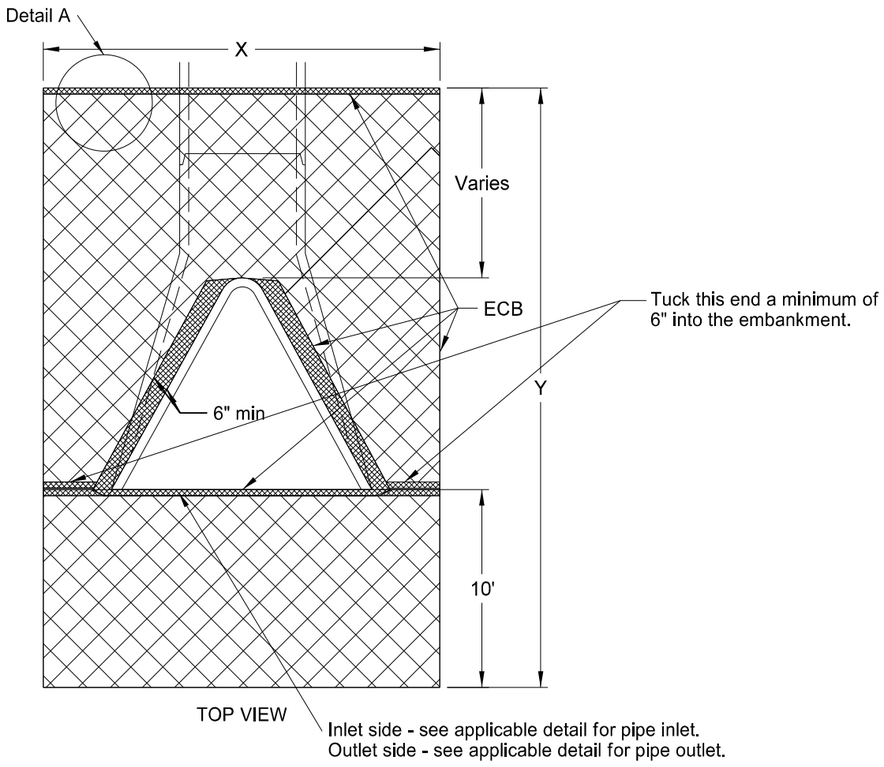
See Section 77 Permanent Erosion Control Sheets for locations and quantities.



FRONT VIEW

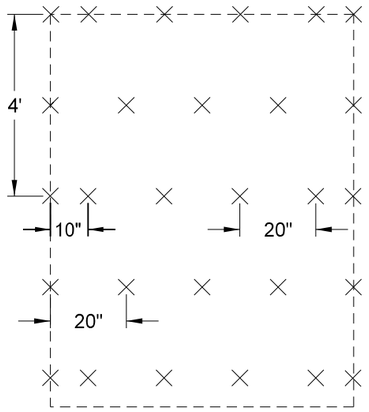


SIDE VIEW



TOP VIEW

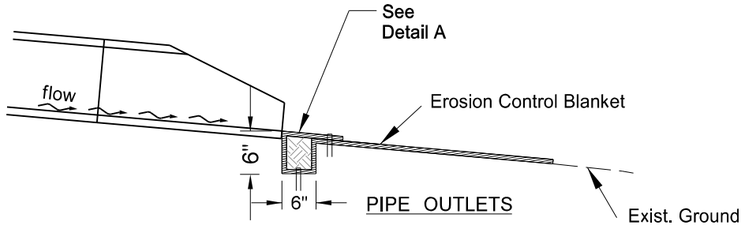
NOTE: Tuck the ECB a minimum of 6" into the embankment (against the flared end section) around the opening of the flared end section.

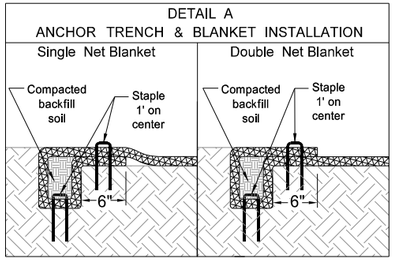


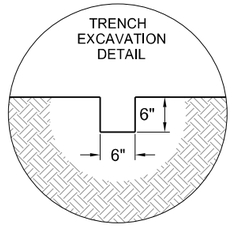
STAPLE PATTERN

DIA	X	Y	Surface area to be protected	ECB
In	Ft	Ft	SF	SY
15	9.0	20.0	176.0	20
18	9.5	16.3	162.0	18
24	10.5	17.5	172.1	20
27	11.0	18.0	182.3	21
30	11.6	18.5	195.1	22
36	12.7	19.2	216.7	24
42	13.3	19.2	225.2	25
48	13.8	20.0	238.0	27
54	14.5	19.5	244.7	28
60	15.0	19.0	248.3	28
66	15.6	20.0	264.5	30
72	16.2	20.5	276.8	31

Note: Quantities based on 4:1 slope.







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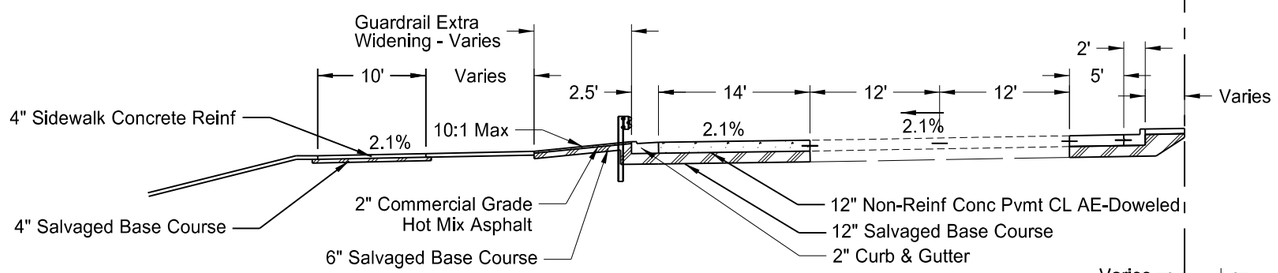
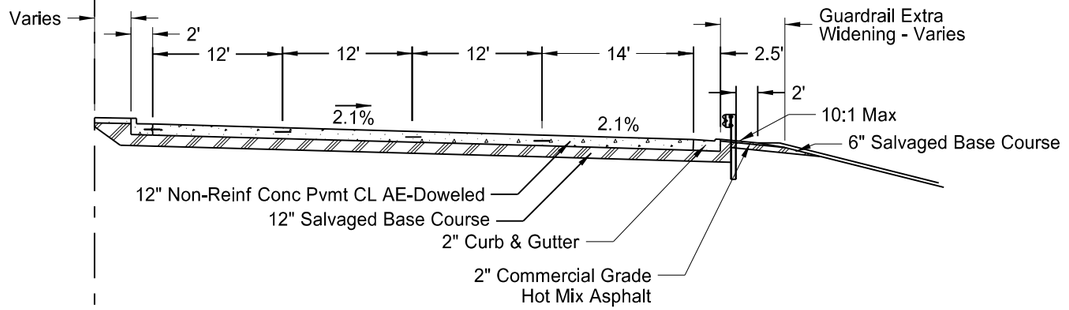
Erosion Control at Culvert Flared End Sections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	44



Typical Section
Sta 130+50 Lt



Typical Section
Sta 126+00 Rt

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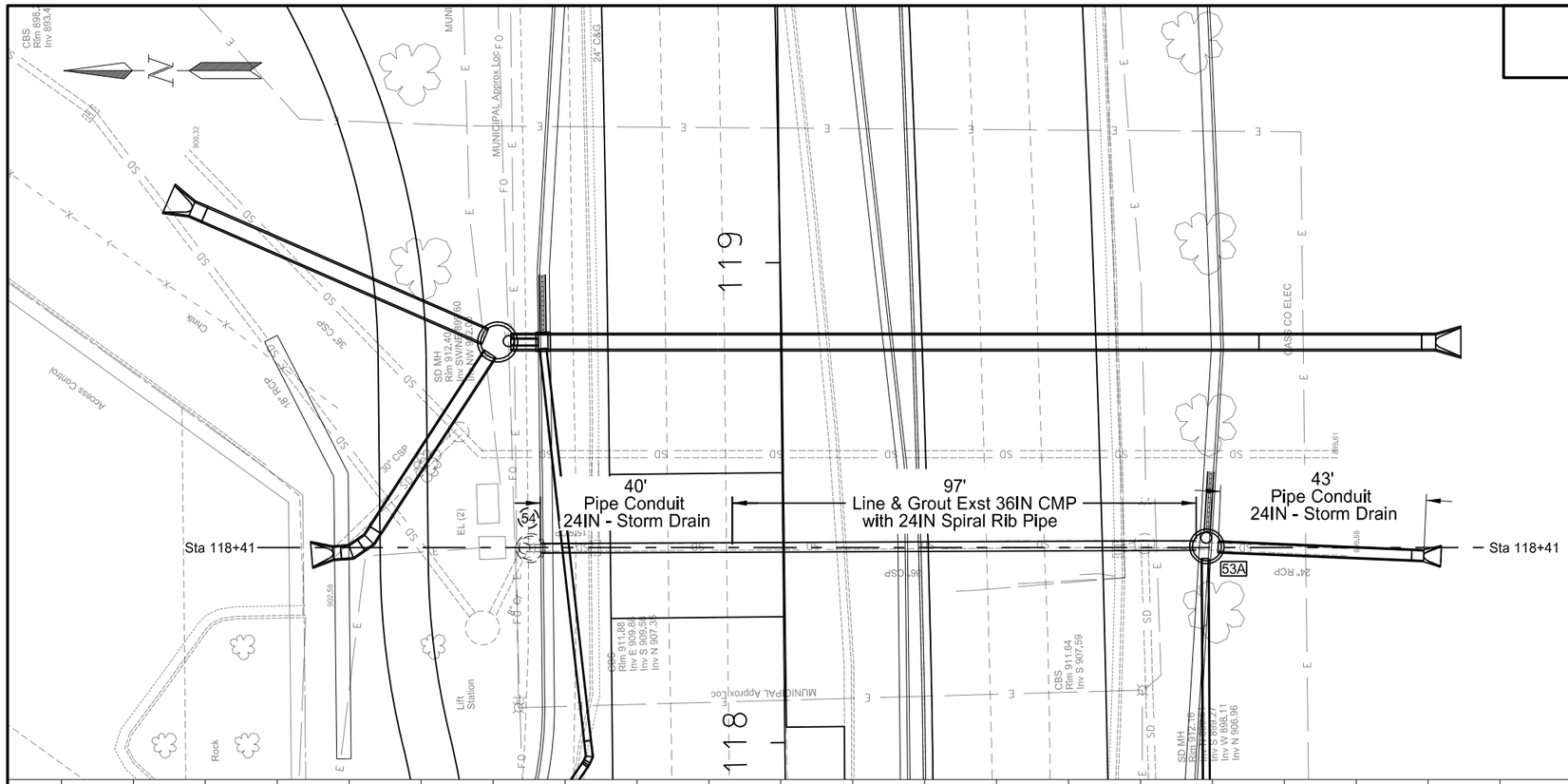
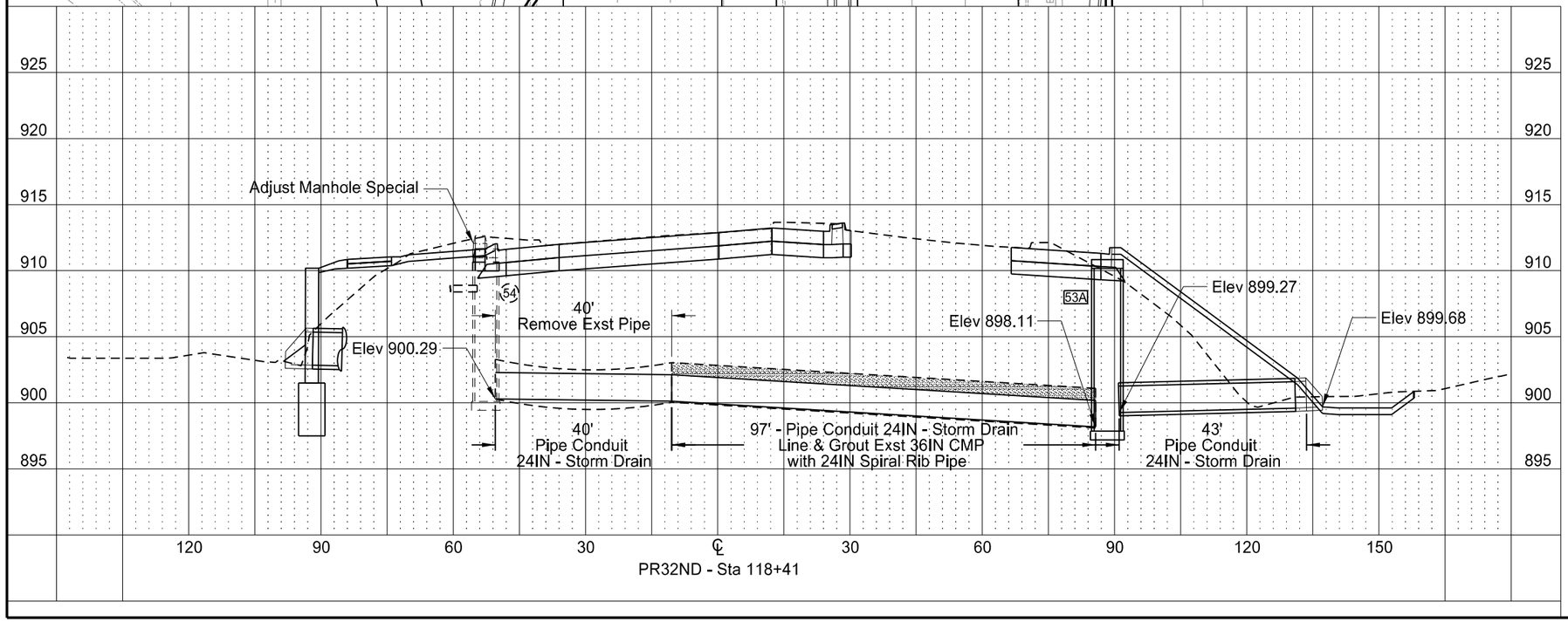
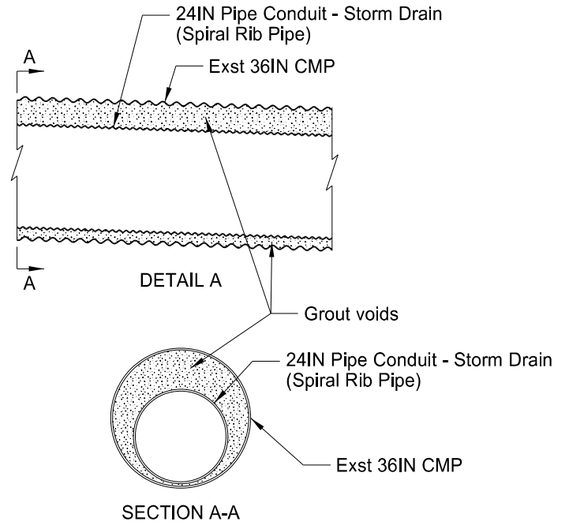
Guardrail Paving

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	45







Notes:

Quantities for work shown on this sheet included on Plan & Profile Sheets for 32nd Avenue South.

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Line & Grout Pipe Detail

32nd Avenue South

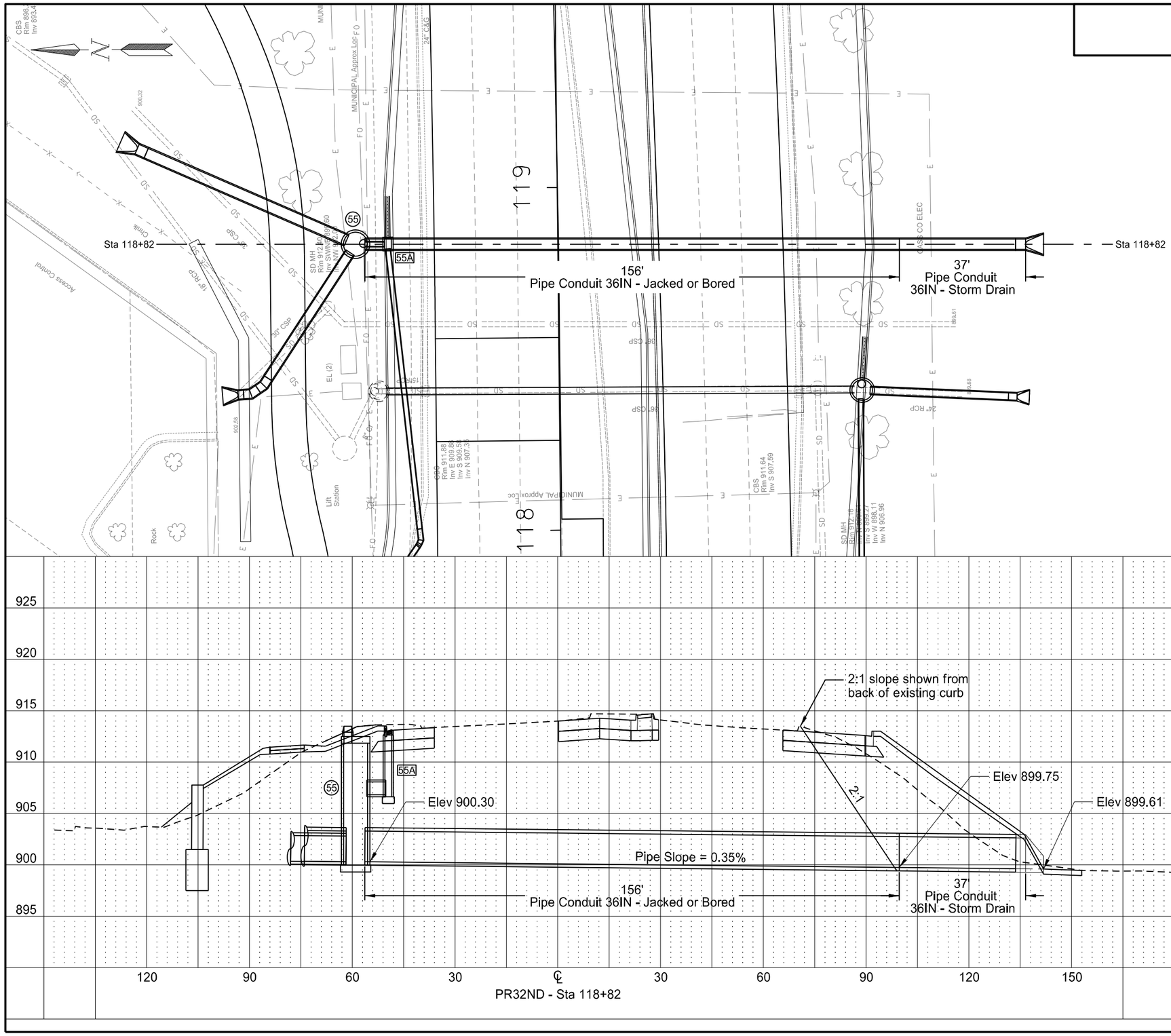
Station 118+41

11/30/2016 11:49:17 AM jrensch R:\project\80029062.166\design\Sheets\020GD_011_SlipLine_Sta 118+41.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	46

Notes:

Quantities for work shown on this sheet included on Plan & Profile Sheets for 32nd Avenue South.



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Jacked or Bored Pipe Detail

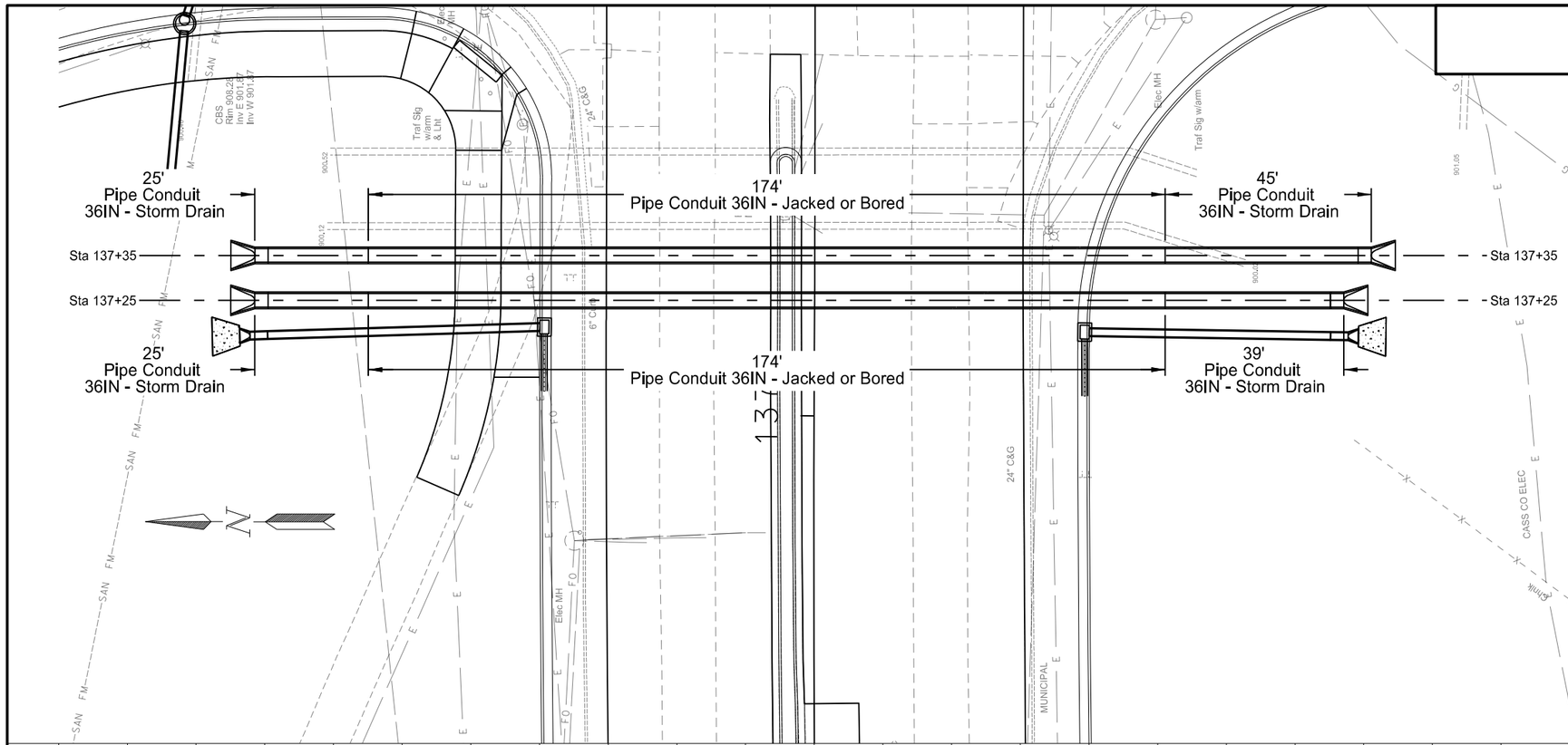
32nd Avenue South

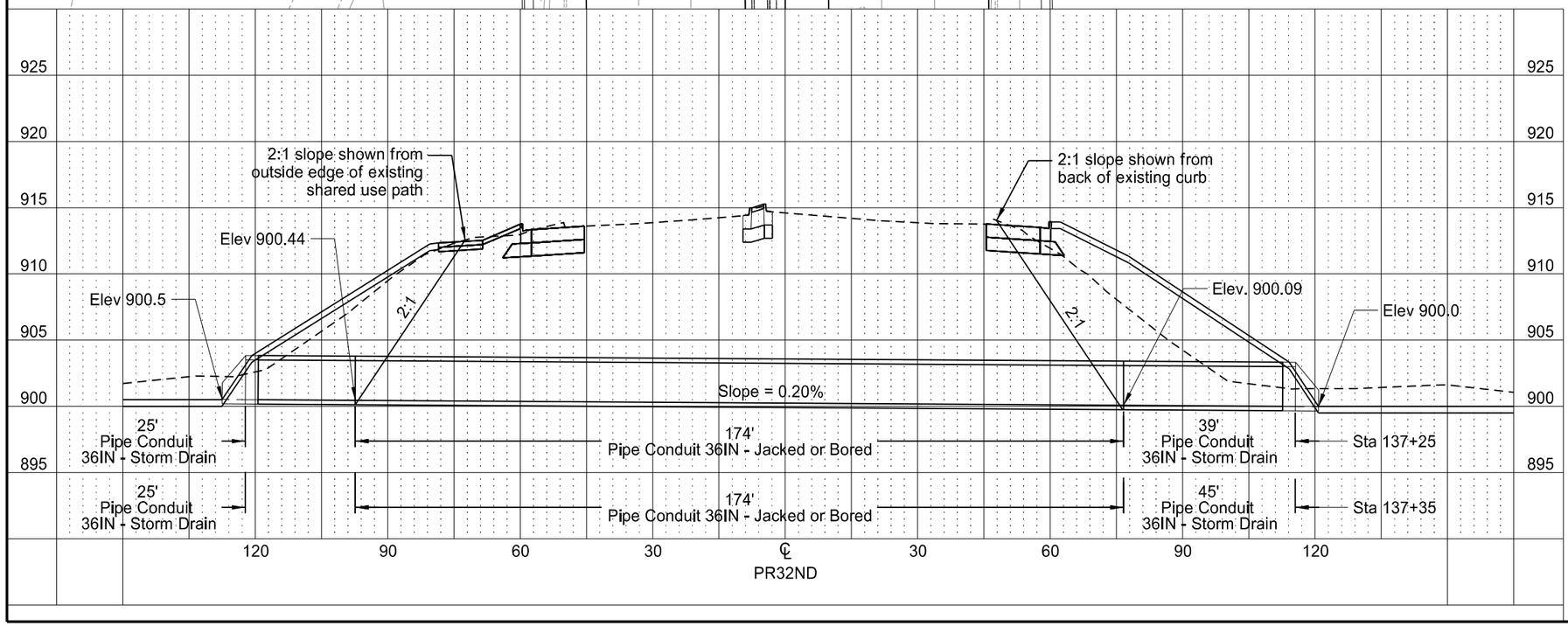
Station 118+82

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	47

Notes:

Quantities for work shown on this sheet included on Plan & Profile Sheets for 32nd Avenue South.





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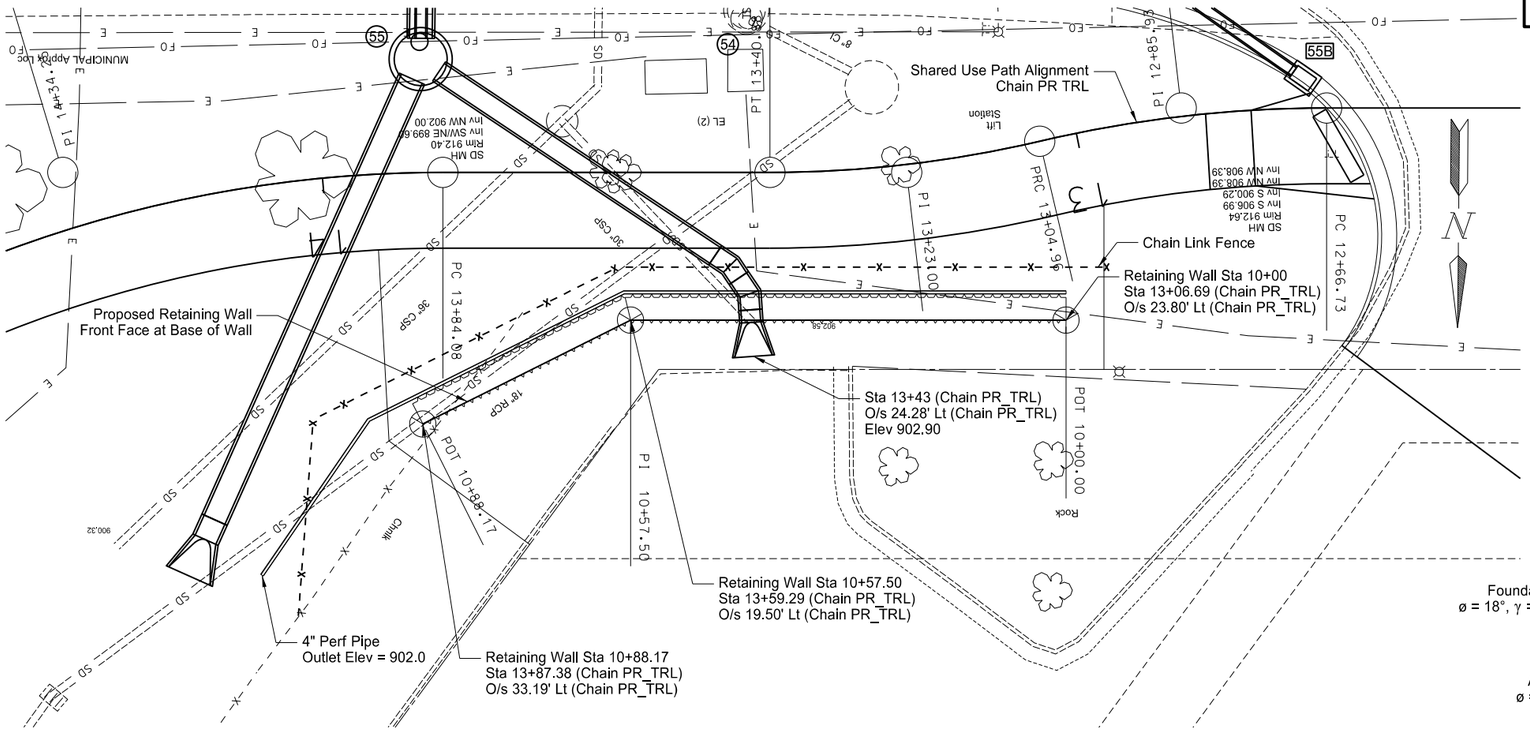
Jacked or Bored Pipe Detail

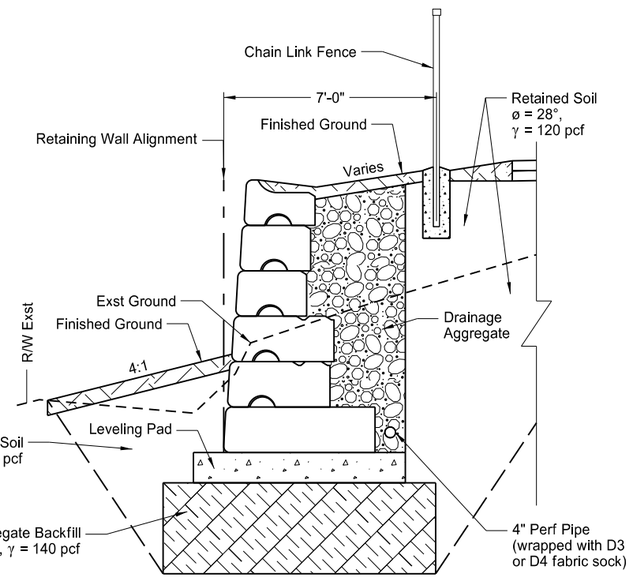
32nd Avenue South

Sta 137+25 & 137+35

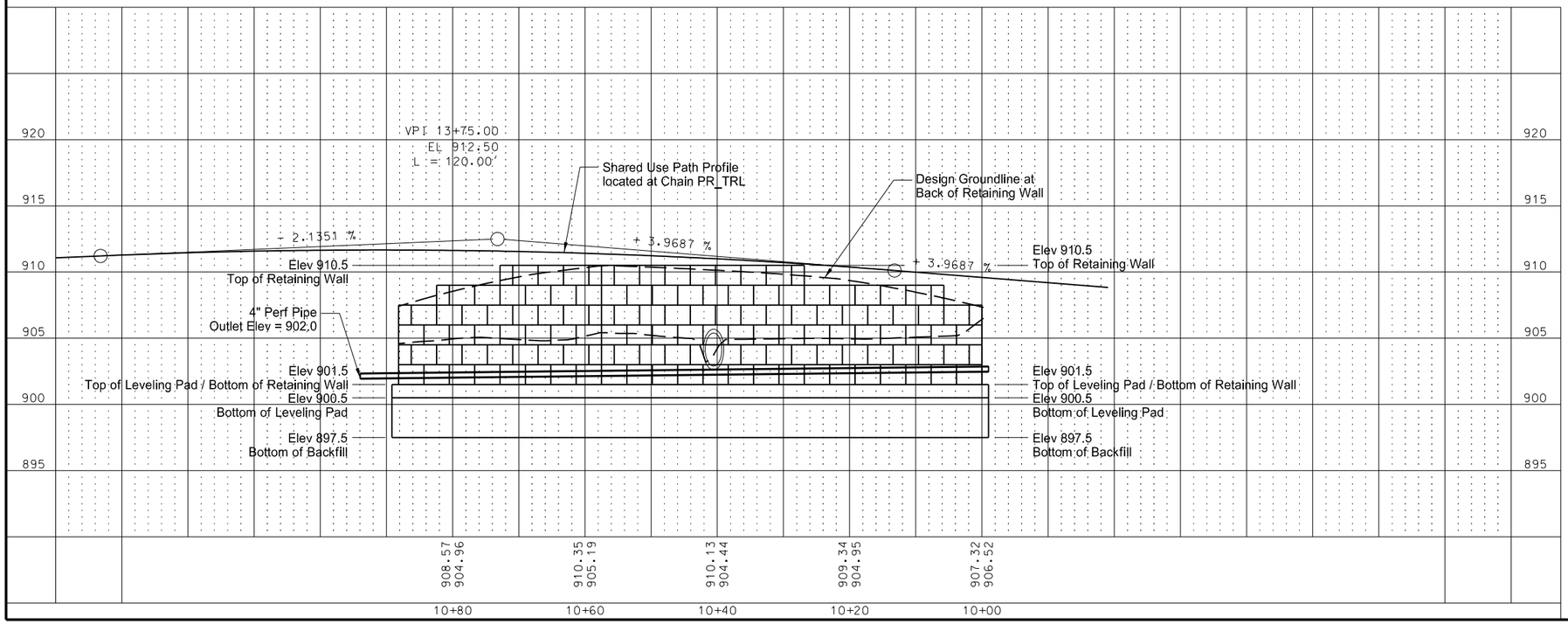
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	20	48

Spec	Code	Bid Item	Unit	Quantity
930	9551	CONCRETE MODULAR BLOCK RETAINING WALL		
		Shared Use Path near Flying J Approach	SF	713





Retaining Wall
Section View



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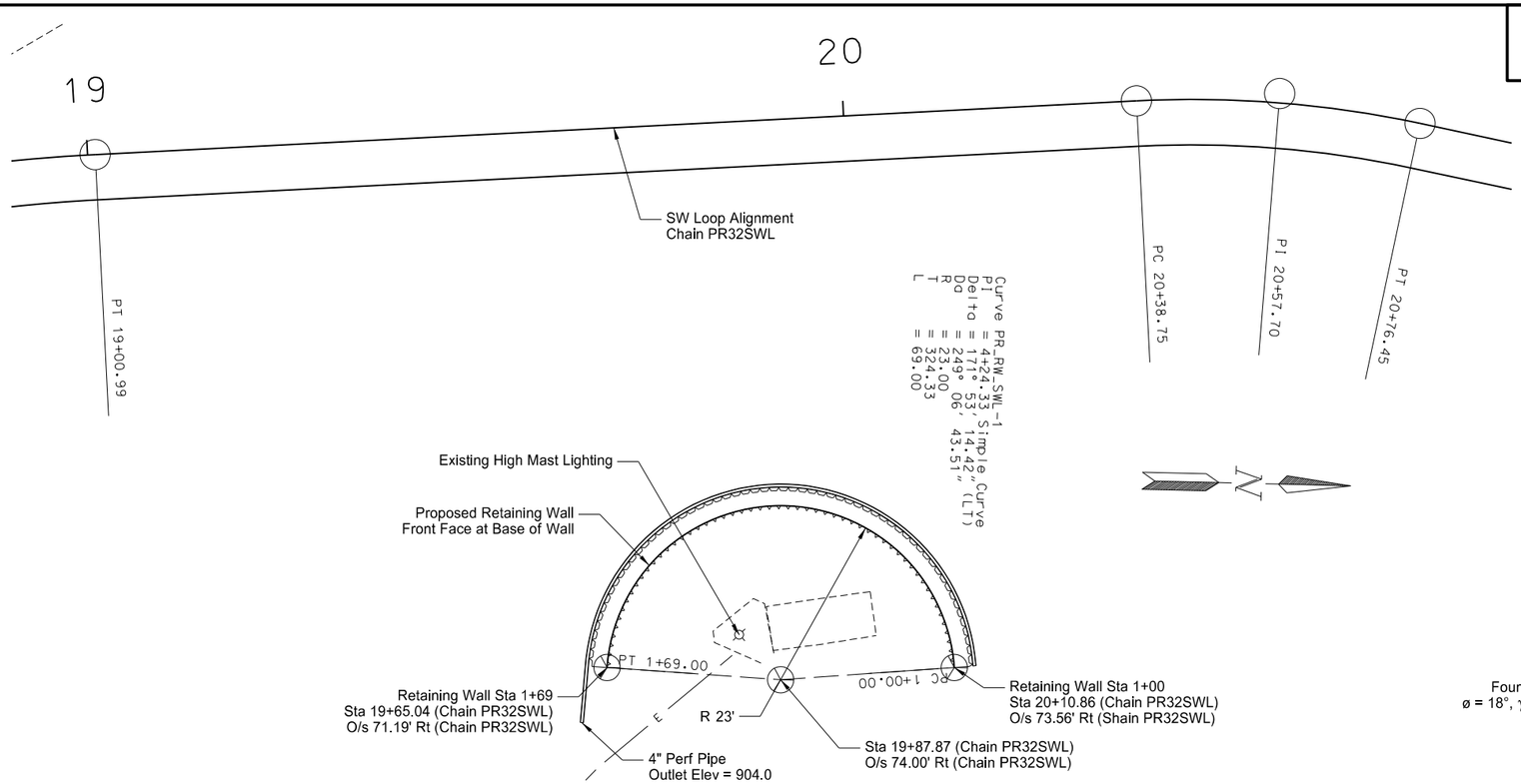
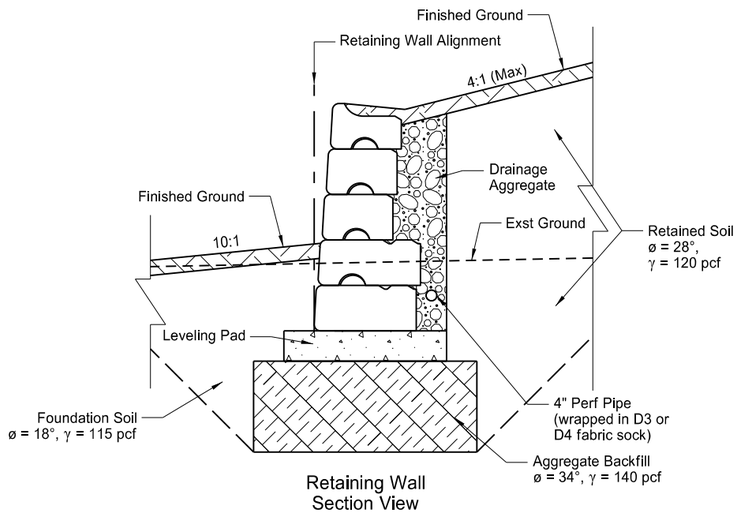
Retaining Wall Details

Shared Use Path
Near Flying J Approach

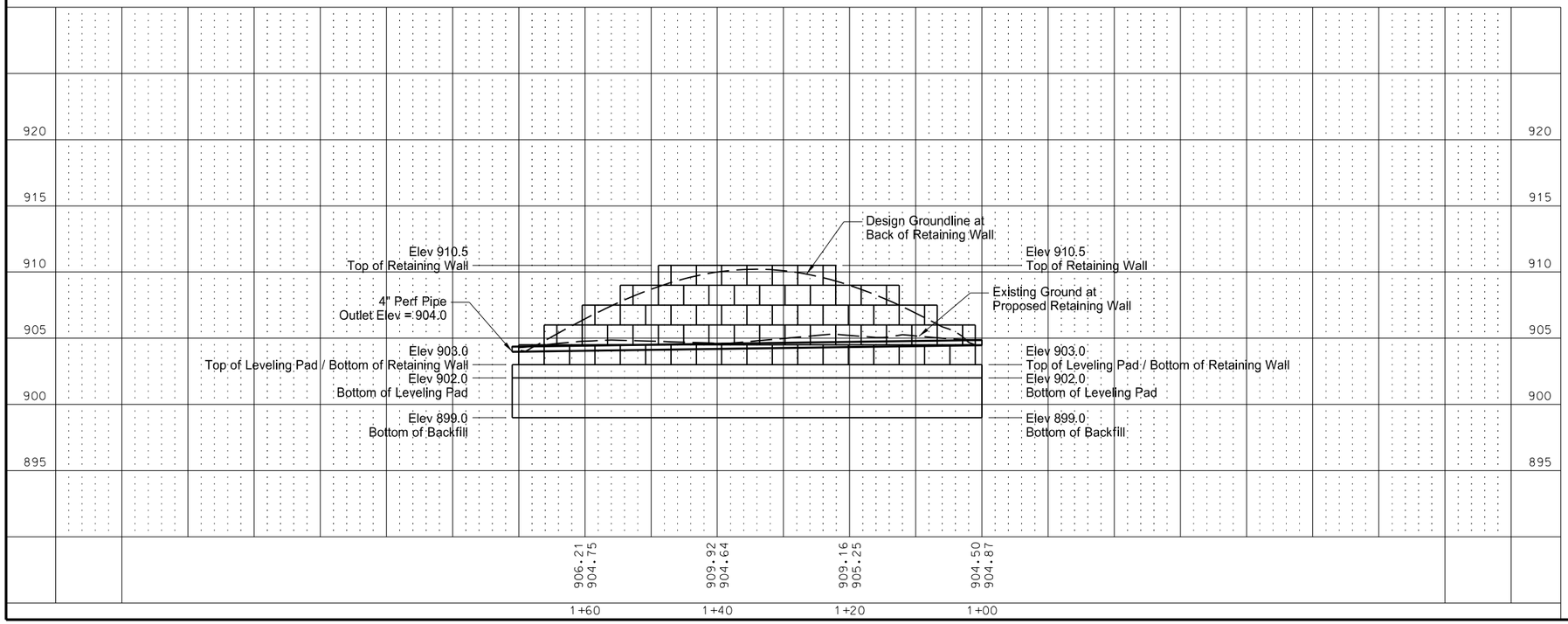
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	20	49

Spec	Code	Bid Item	Unit	Quantity
930	9551	CONCRETE MODULAR BLOCK RETAINING WALL		
		Shared Use Path near Flying J Approach	SF	386





Retaining Wall
Section View



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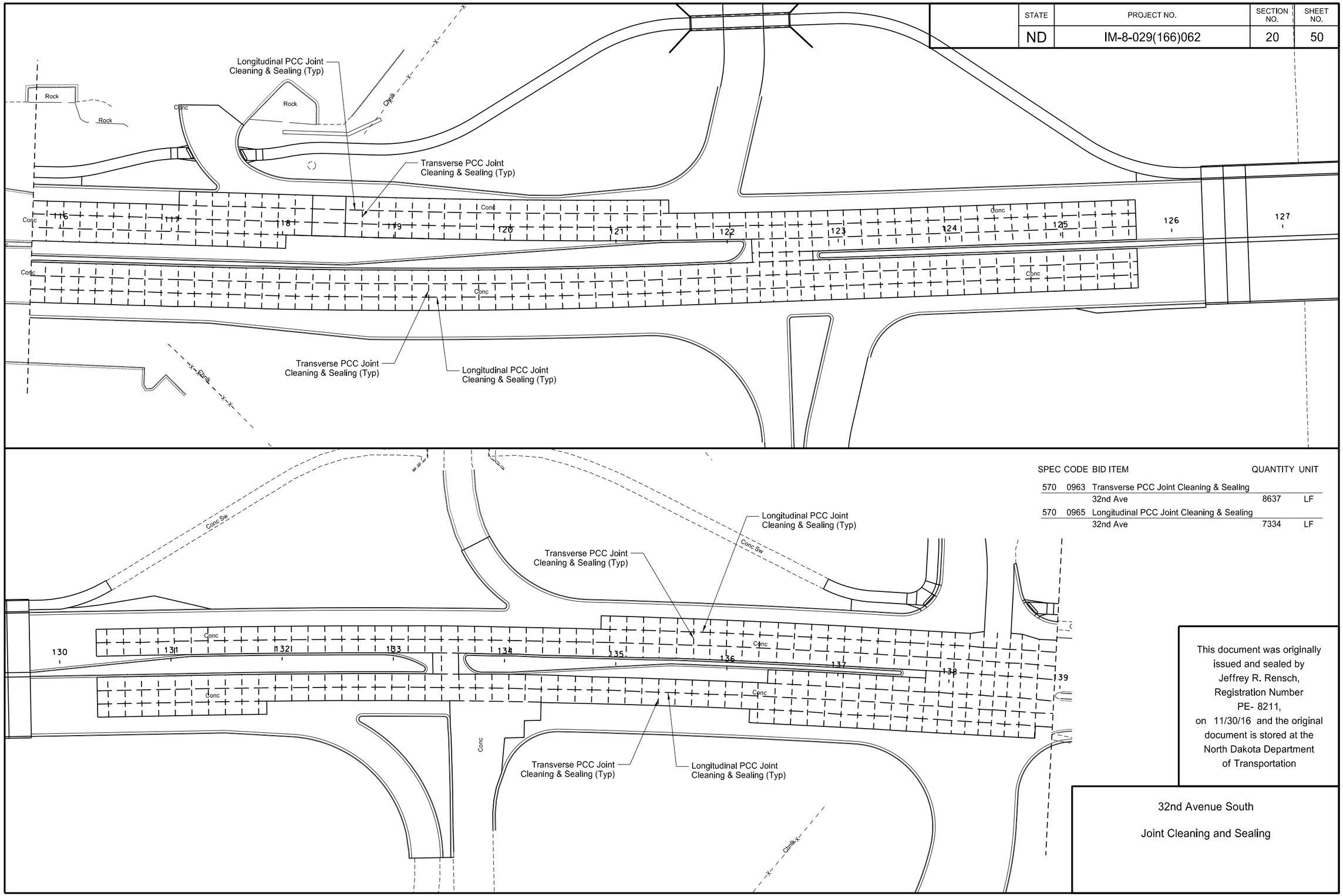
Retaining Wall Details

SW Loop @ High Mast Light

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	20	50



SPEC CODE	BID ITEM		QUANTITY	UNIT
570 0963	Transverse PCC Joint Cleaning & Sealing			
	32nd Ave		8637	LF
570 0965	Longitudinal PCC Joint Cleaning & Sealing			
	32nd Ave		7334	LF

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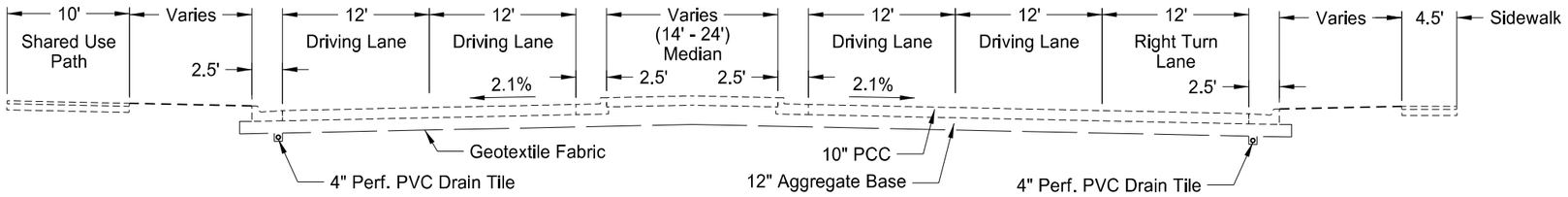
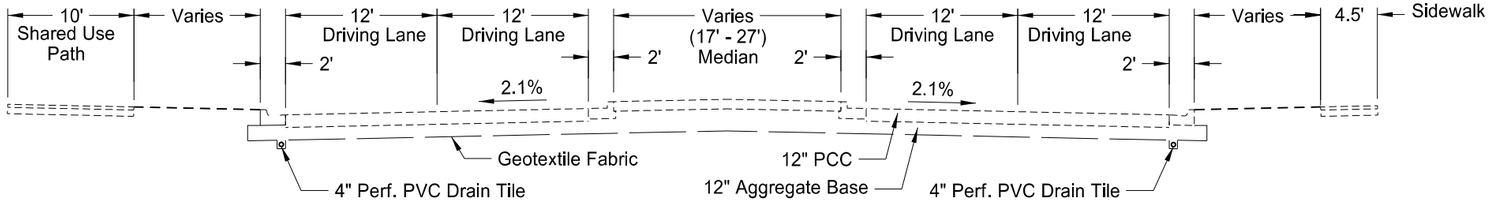
32nd Avenue South

Joint Cleaning and Sealing

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	1



Typical Section
32nd Ave S - Sienna Dr to 42nd St
Sta 92+78 to Sta 99+72



Typical Section
32nd Ave S - 42nd St to 39th St
Sta 99+72 to Sta 115+75

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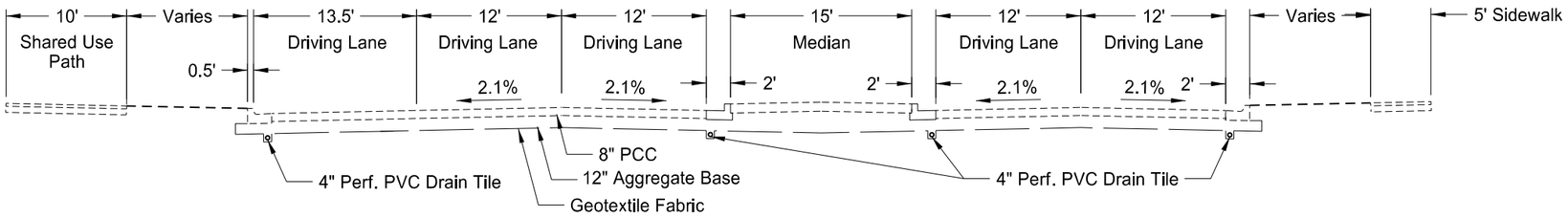
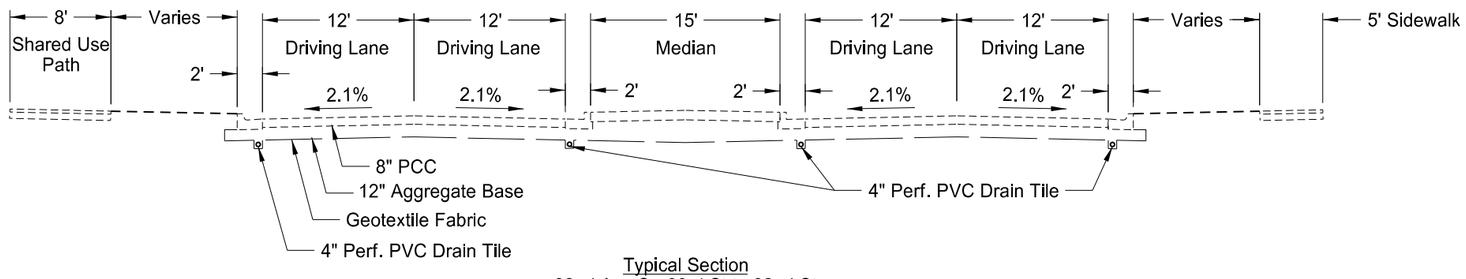
Existing Typical Section

32nd Avenue South
(West of Interchange)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	2



Typical Section
32nd Ave S - 36th St to 33rd St
Sta 138+95 to Sta 145+75



Typical Section
32nd Ave S - 33rd St to 32nd St
Sta 145+75 to Sta 155+88

Note: No aggregate base or geotextile fabric in median areas without left turn lanes.

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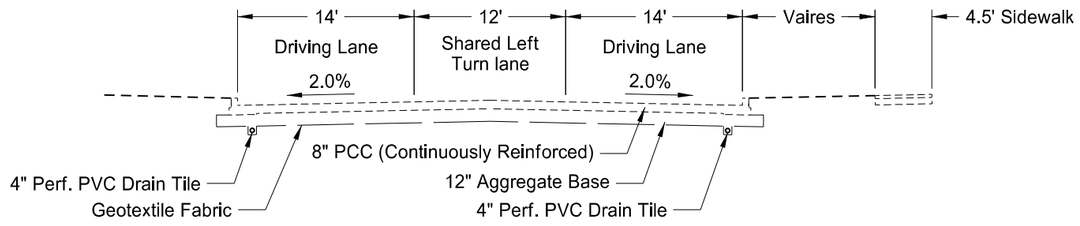
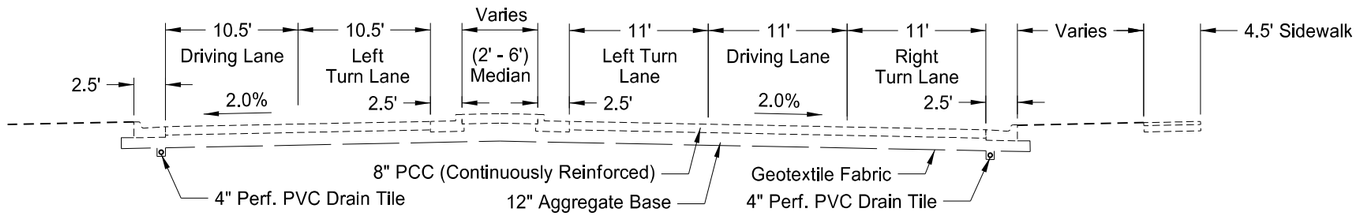
Existing Typical Section

32nd Avenue South
(East of Interchange)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	3



Typical Section
39th Street
Sta 3904+95 to 3908+25



Typical Section
39th Street
Sta 3908+25 to Sta 3912+19

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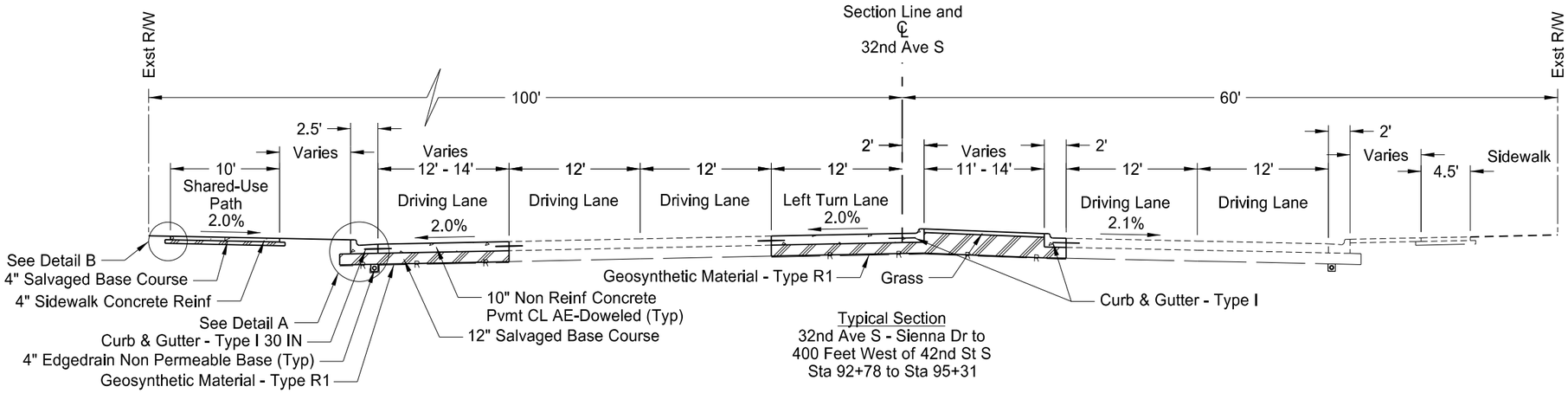
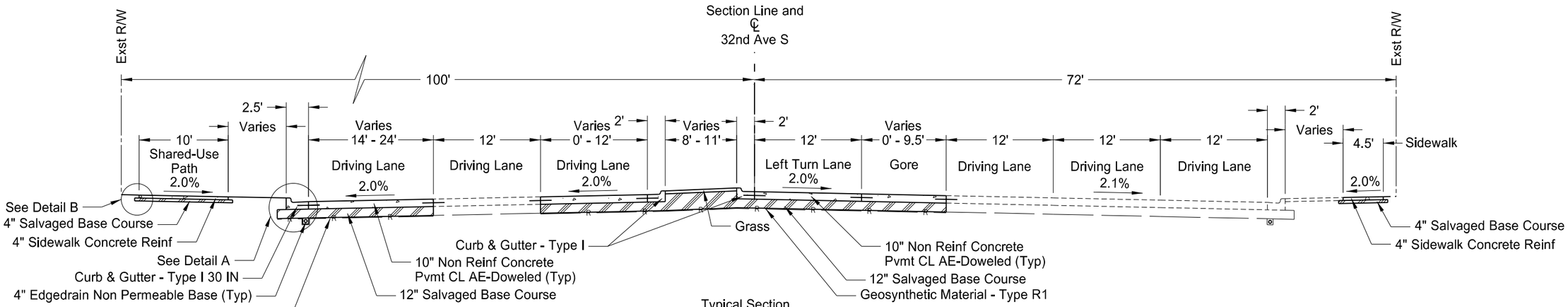
Existing Typical Section

39th Street SW

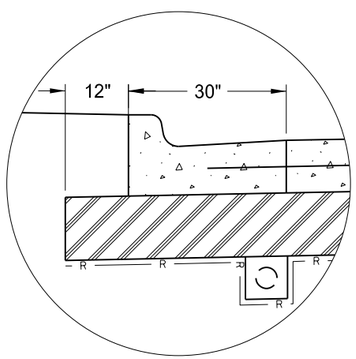
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	4



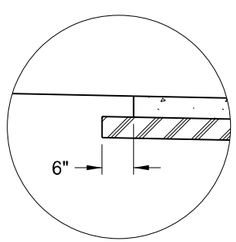
Typical Section
32nd Ave S - Sienna Dr to
400 Feet West of 42nd St S
Sta 92+78 to Sta 95+31



Typical Section
32nd Ave S - 400 Feet West
of 42nd St S to 42nd St S
Sta 95+31 to Sta 99+72



Detail A



Detail B

Notes:

① Refer to Section 40 Removals and Section 90 Paving for exact limits of concrete panel removal and replacement.

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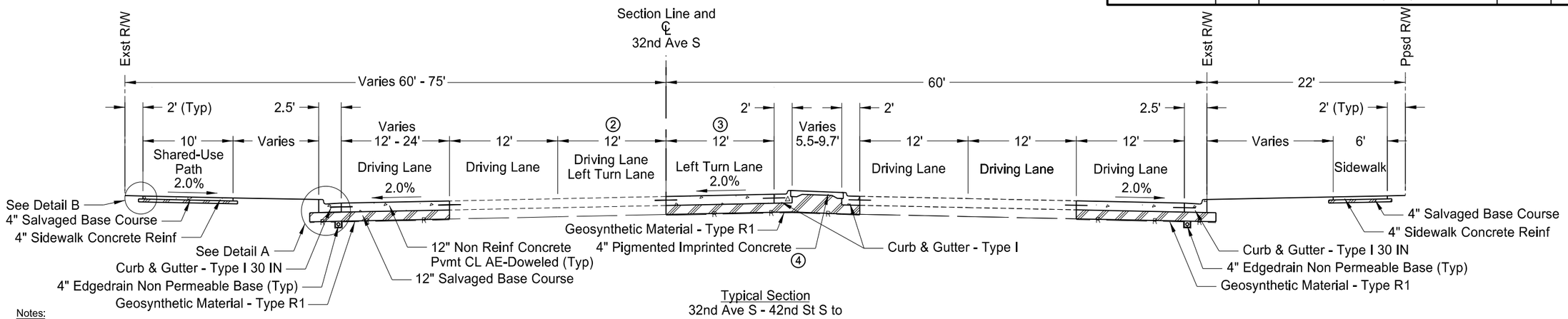
Proposed Typical Section

32nd Avenue South
(West of Interchange)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	5



Typical Section
32nd Ave S - 42nd St S to
270 Feet East of 41st St S
Sta 99+72 to Sta 107+91

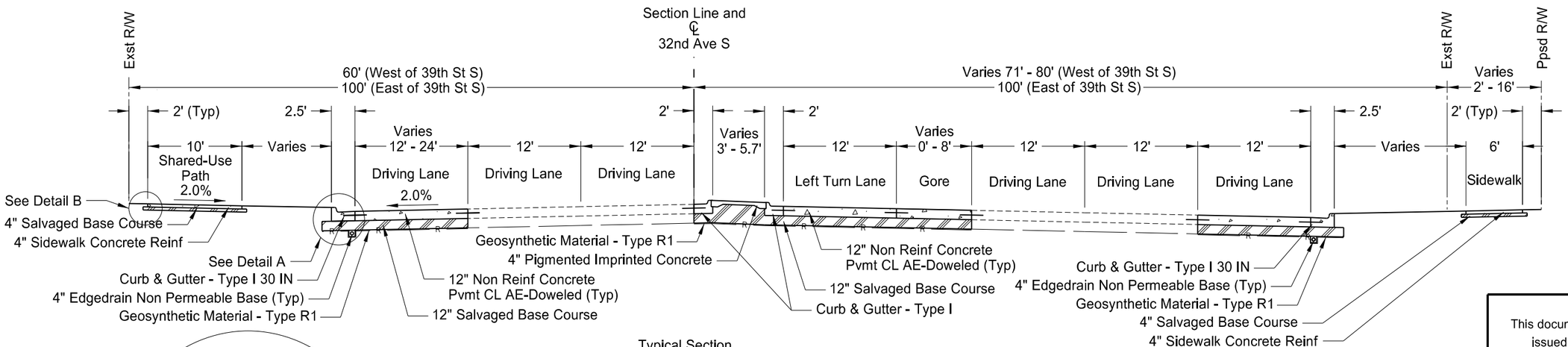
Notes:

① Refer to Section 40 Removals and Section 90 Paving for exact limits of concrete panel removal and replacement.

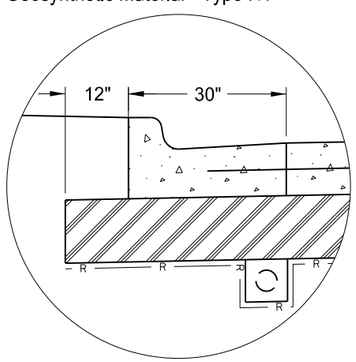
② This lane removed and replaced from Sta 102+02 to Sta 105+77.

③ This lane remains in place (No Replacement) from Sta 99+72 to Sta 102+02.

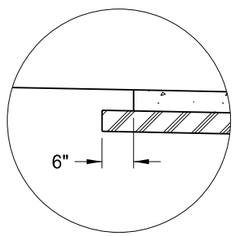
④ Median treatment is grass from Sta 105+75 to Sta 107+90.



Typical Section
32nd Ave S - 270 Feet East of 41st St S to
215 Feet East of 39th St S
Sta 107+91 to Sta 115+75



Detail A



Detail B

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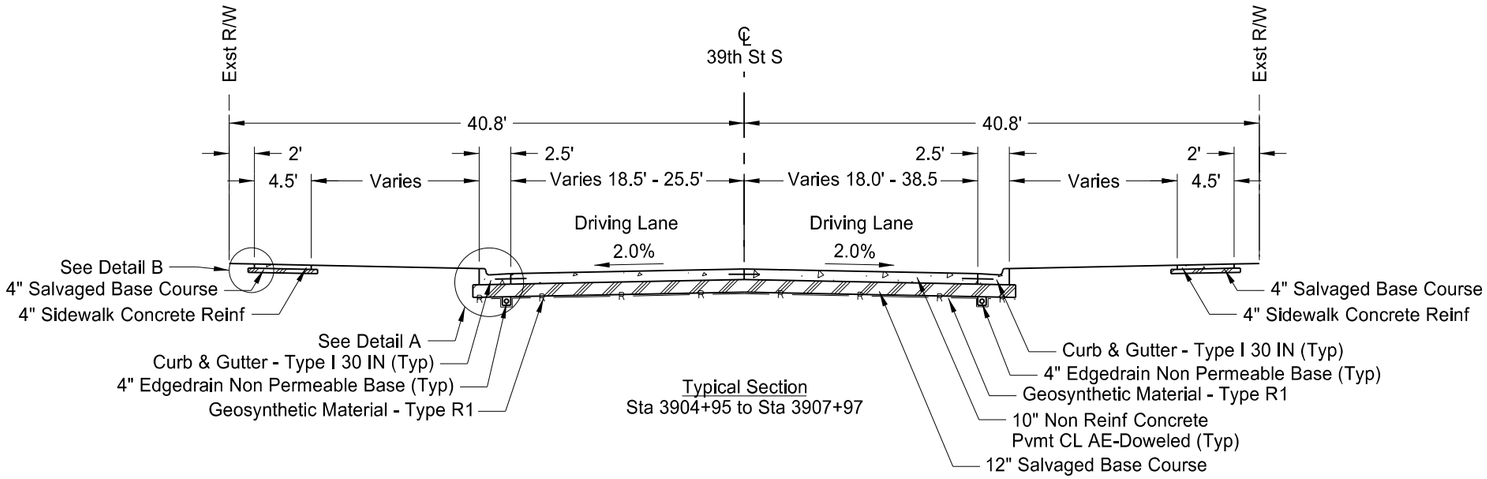
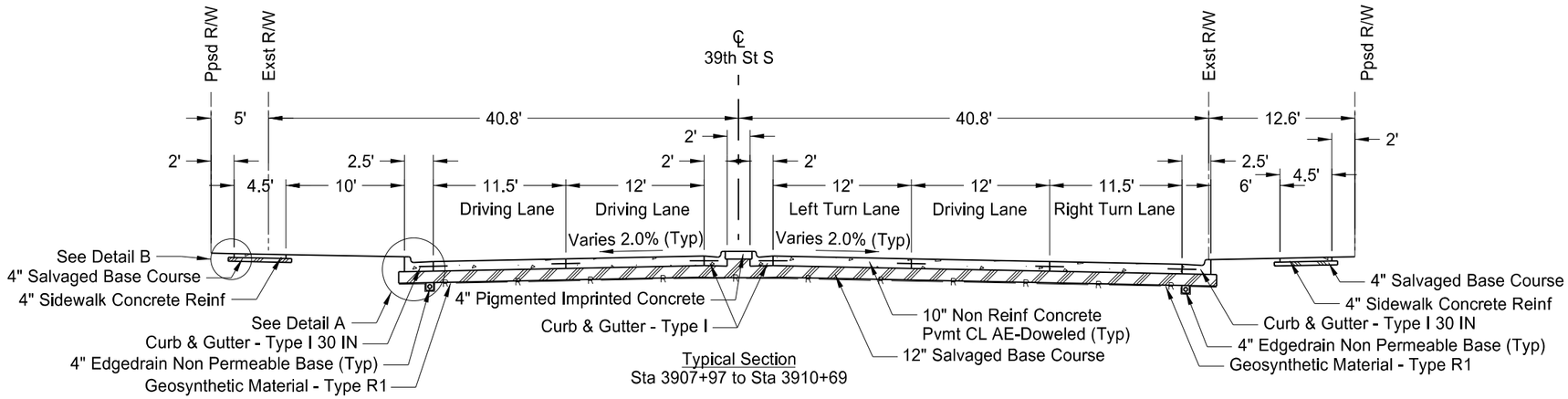
Proposed Typical Section

32nd Avenue South
(West of Interchange)

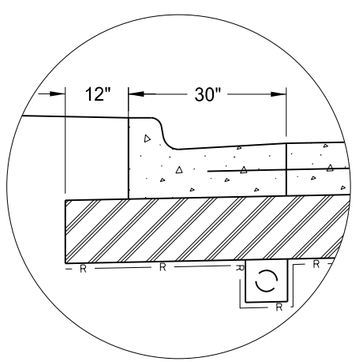
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	6



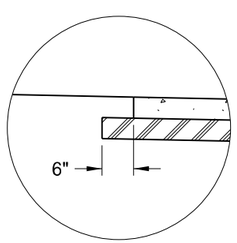
Typical Section
Sta 3904+95 to Sta 3907+97



Typical Section
Sta 3907+97 to Sta 3910+69



Detail A



Detail B

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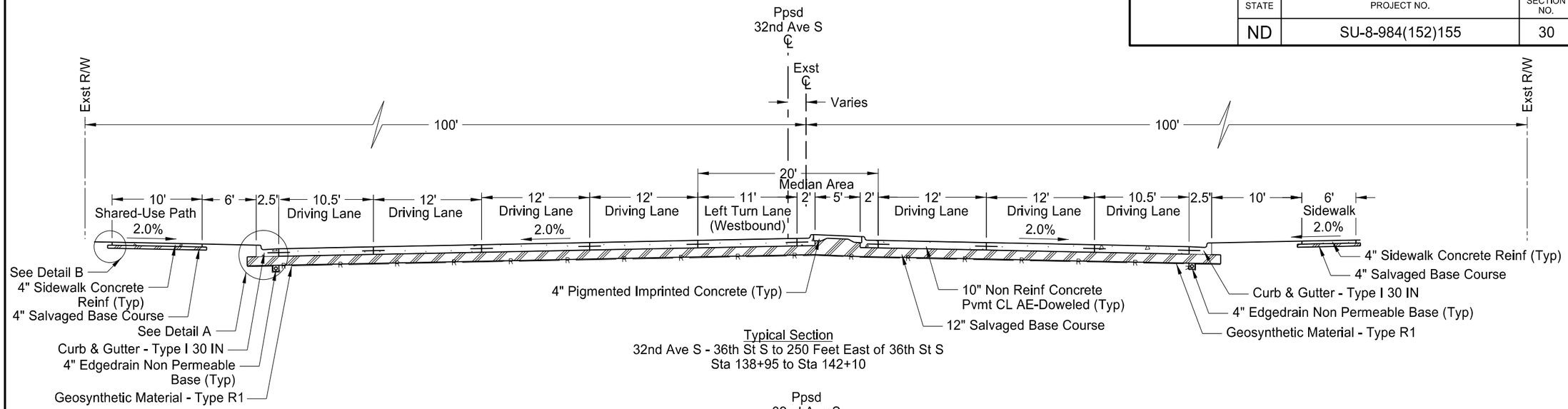
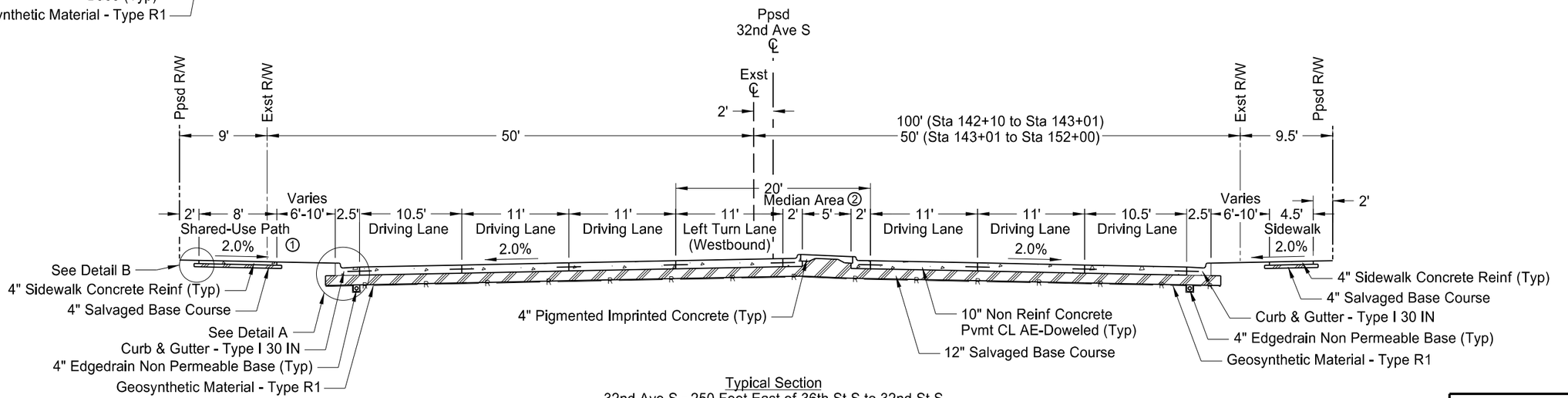
Proposed Typical Section

39th St S

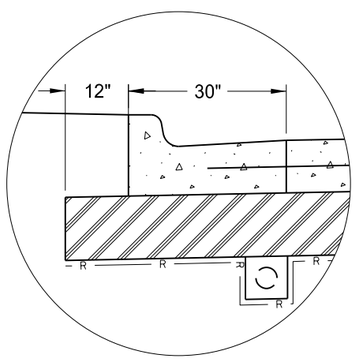
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	7



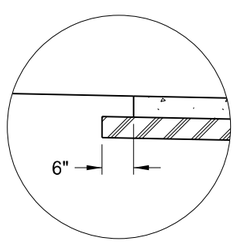
Typical Section
32nd Ave S - 36th St S to 250 Feet East of 36th St S
Sta 138+95 to Sta 142+10



Typical Section
32nd Ave S - 250 Feet East of 36th St S to 32nd St S
Sta 142+10 to Sta 152+00



Detail A



Detail B

Notes:

① Shared - Use Path is 10 Feet wide from Sta 142+10 to Sta 145+42

② Westbound Left Turn Lane:
- Sta 146+01 to Sta 148+05

Eastbound Left Turn Lanes:
- Sta 143+43 to Sta 145+53
- Sta 149+37 to Sta 151+57

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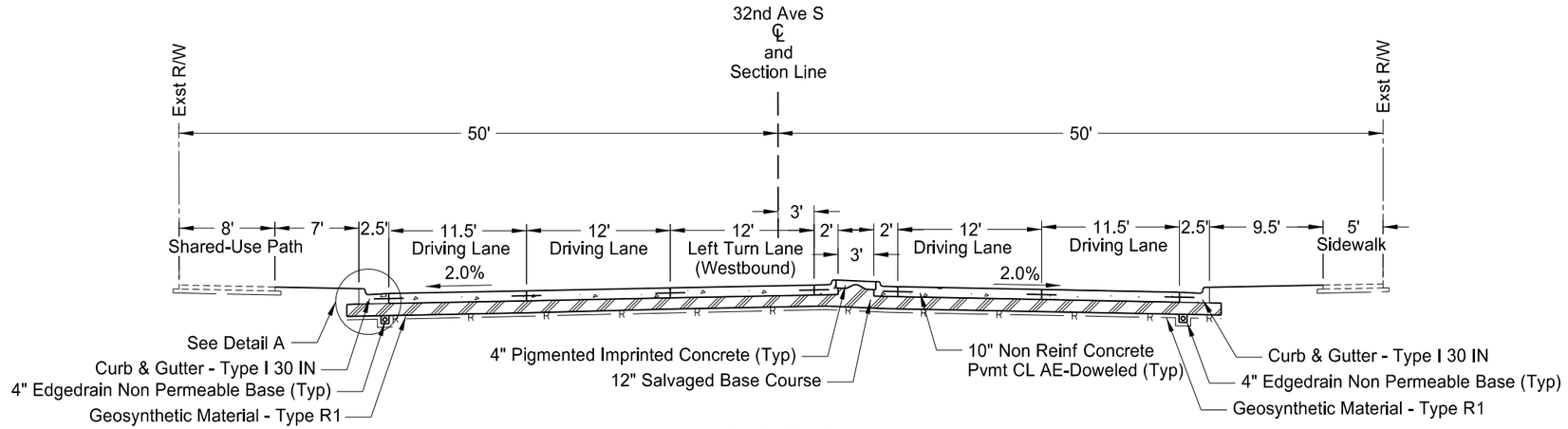
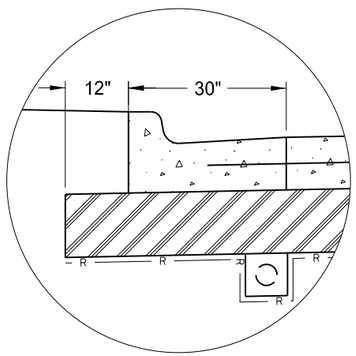
Proposed Typical Sections

32nd Avenue South
(East of Interchange)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	30	8



Typical Section
32nd Ave S - 32nd St S to 400 Feet East of 32nd St S
Sta 152+00 to Sta 155+88



Detail A

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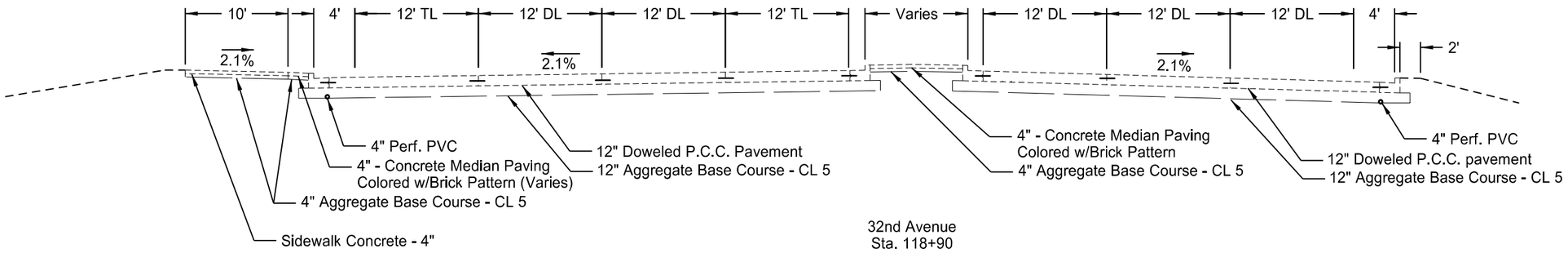
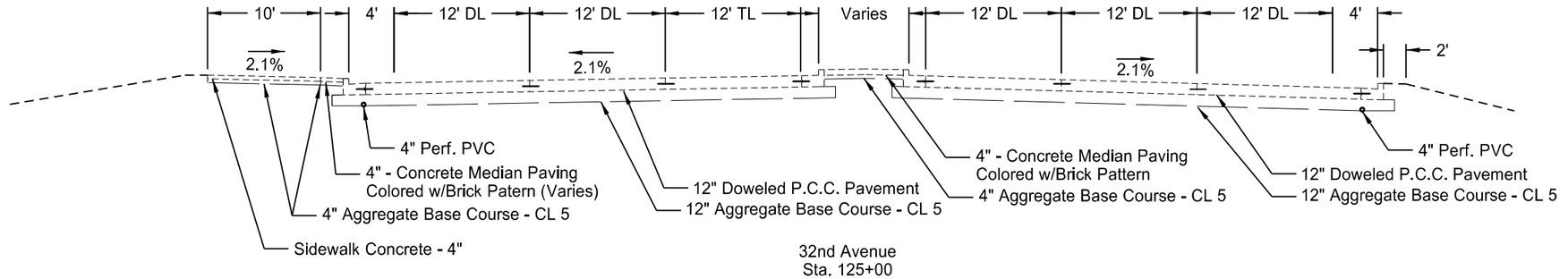
Proposed Typical Sections

32nd Avenue South
(East of Interchange)

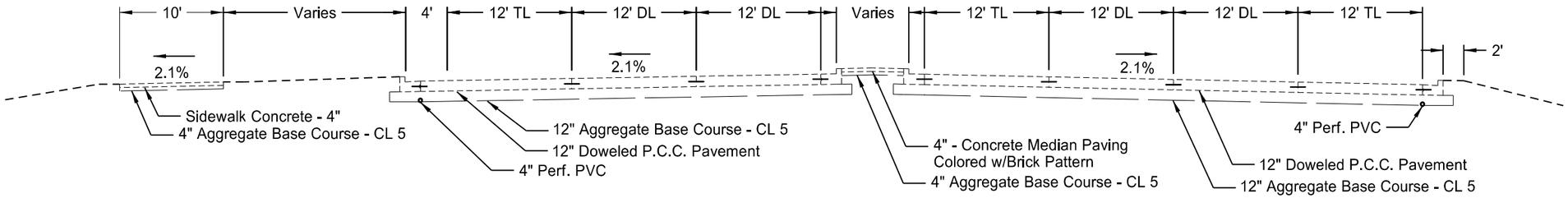
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	30	9



32nd Avenue
Sta. 118+90



32nd Avenue
Sta. 125+00



32nd Avenue
Sta. 136+50

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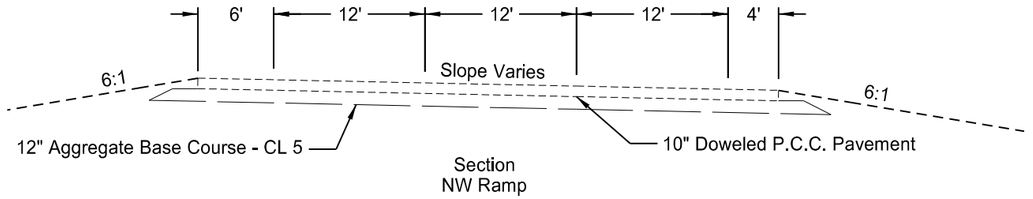
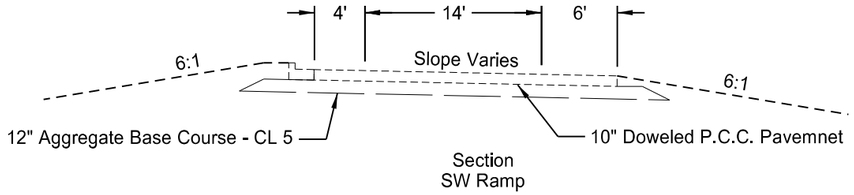
Existing Typical Section

32nd Ave Interchange

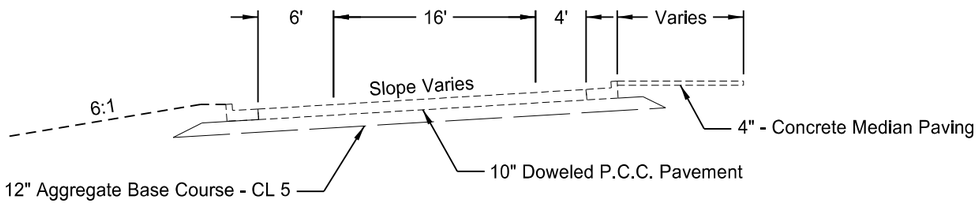
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	30	10



Section
NW Ramp



Section
SW Ramp



SE Loop

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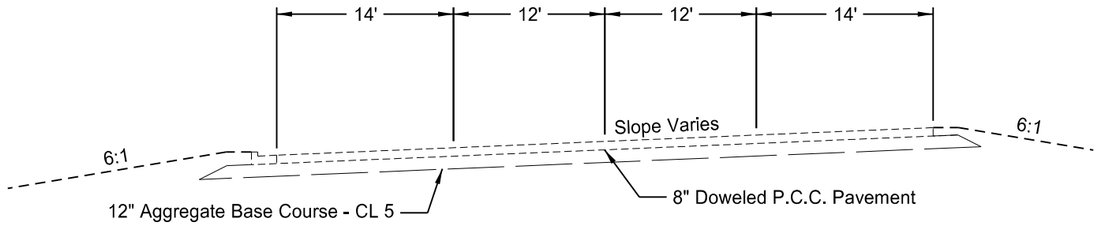
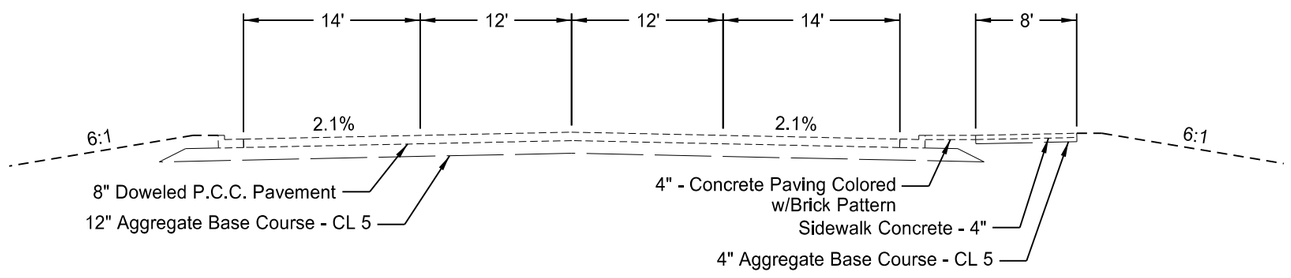
Existing Typical Section

Interchange Ramp

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	30	11



Section
36th Street (South Service Road)



Section
36th Street (North Service Road)

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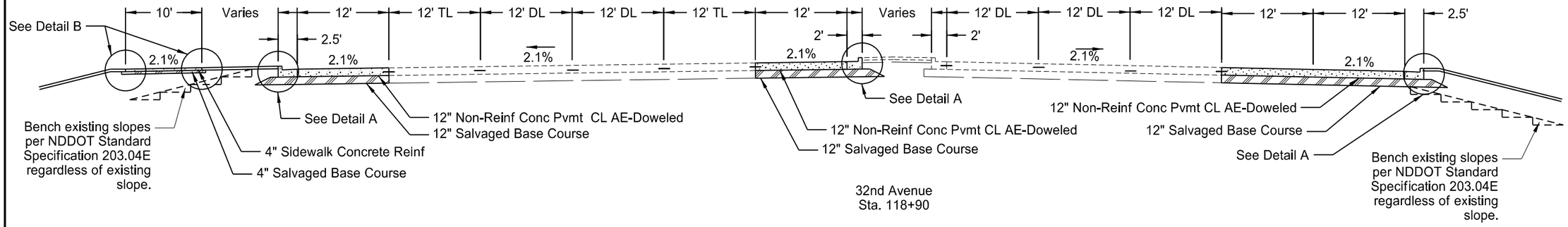
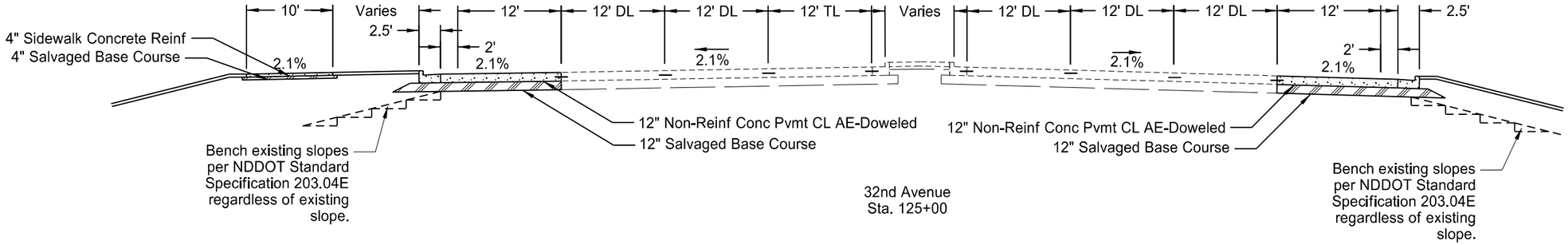
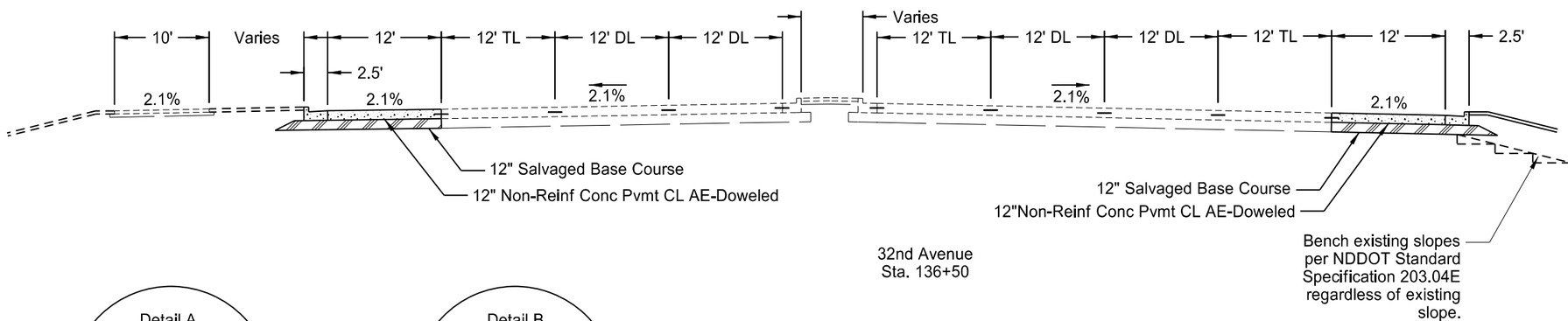
Existing Typical Section

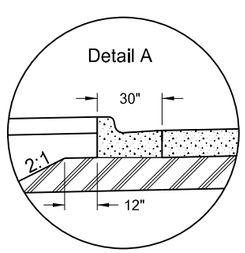
Service Road

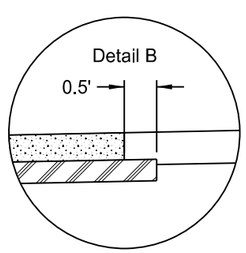
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	30	12











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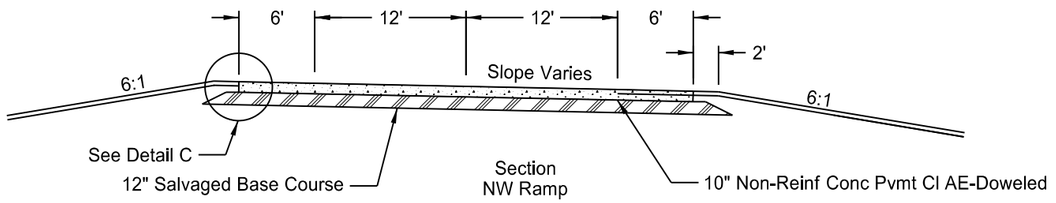
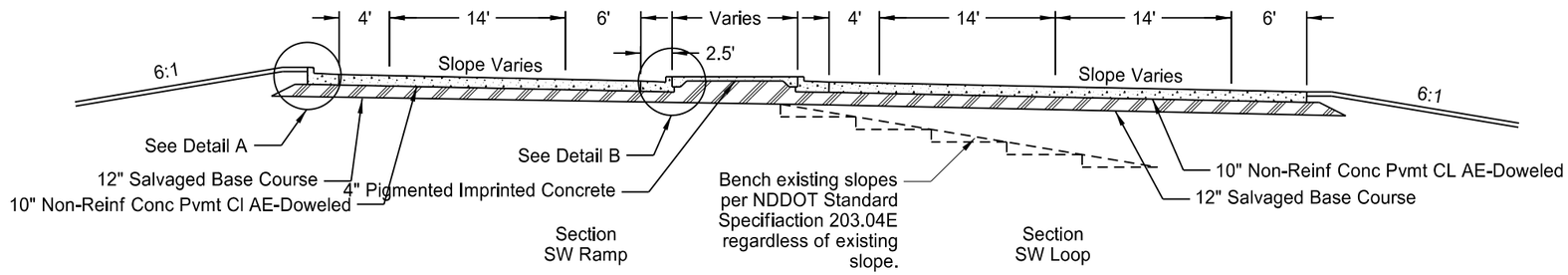
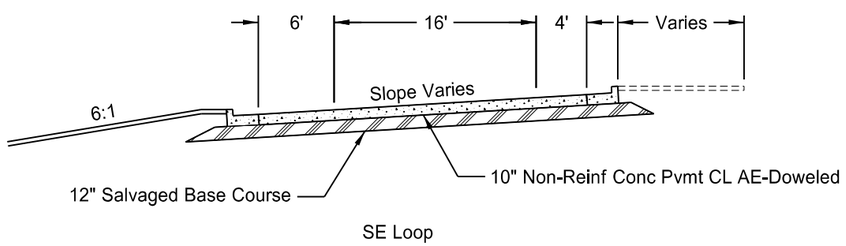
Proposed Typical Section

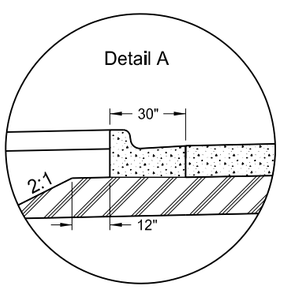
32nd Ave Interchange

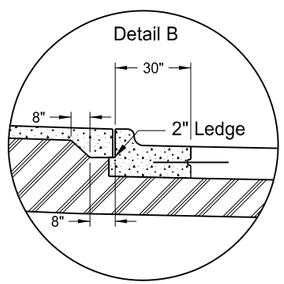
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	30	13

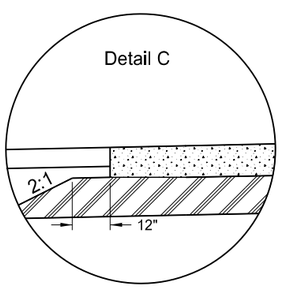












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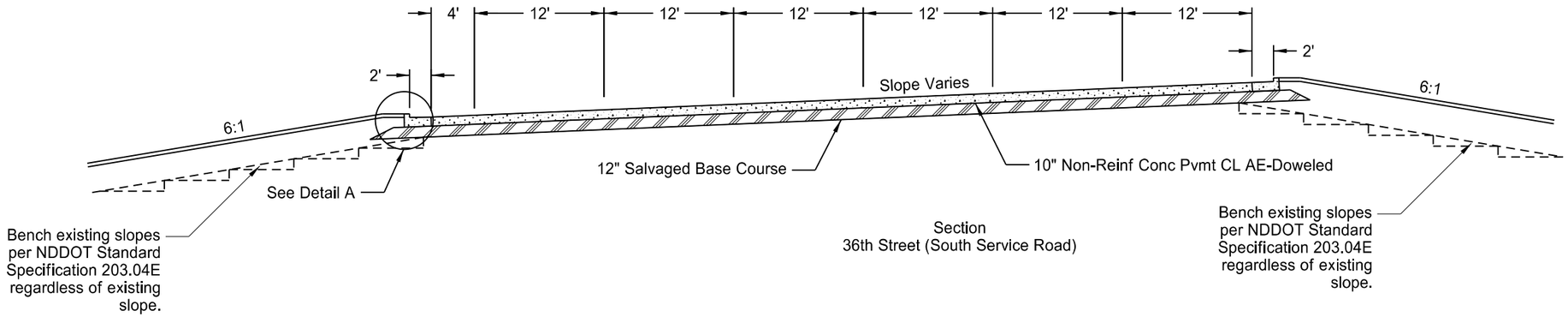
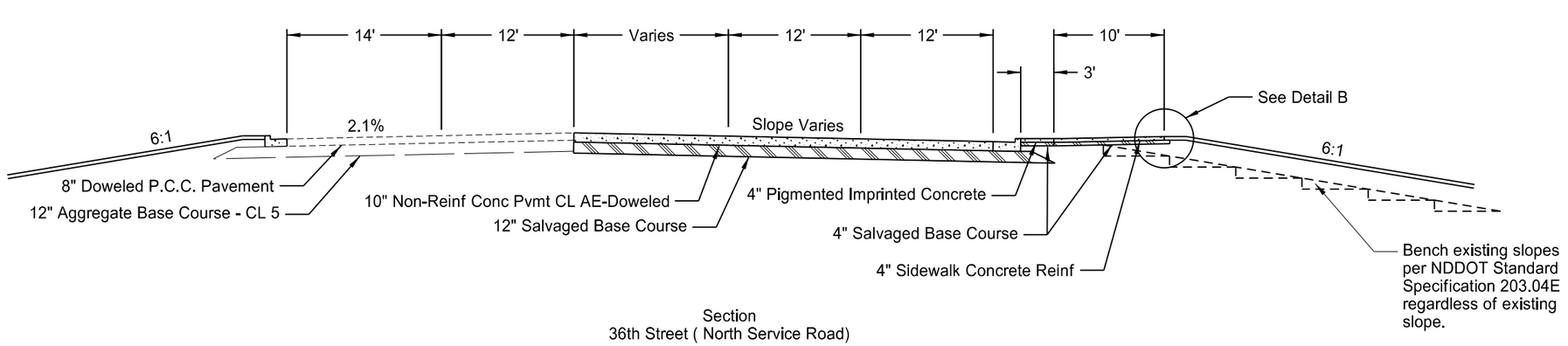
Proposed Typical Section

Interchange Ramp

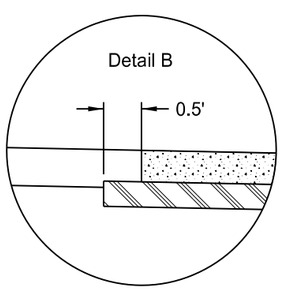
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	30	14

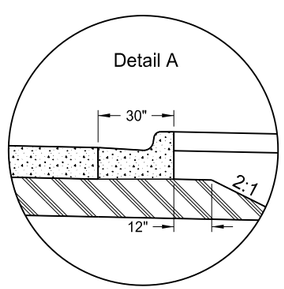


Section
36th Street (South Service Road)



Section
36th Street (North Service Road)





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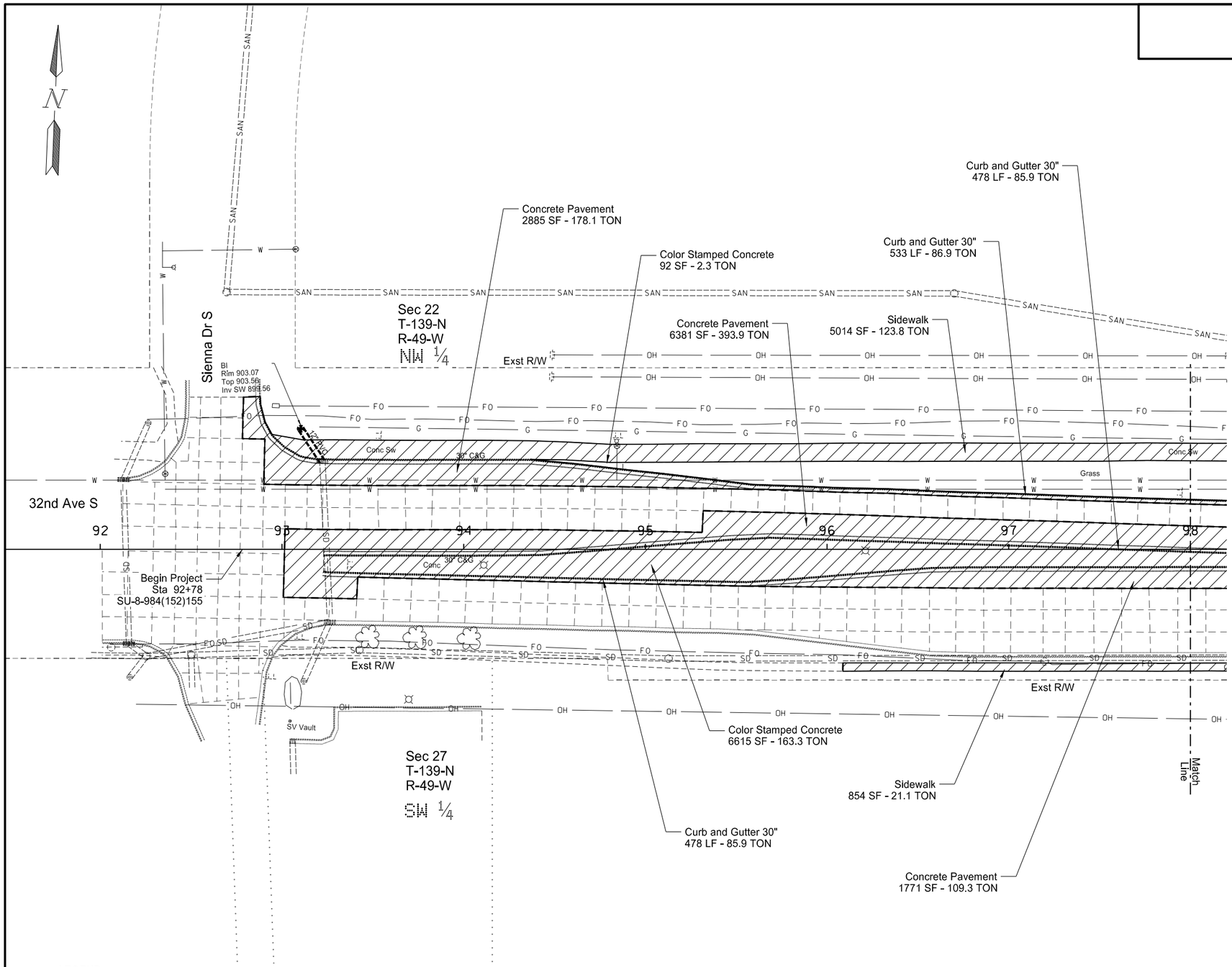
Proposed Typical Section

36th Street SW

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	1

SPEC CODE		BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 10"	681.3	TON
		Concrete Sidewalk	144.9	TON
		Color Stamped Concrete	165.6	TON
		Concrete Curb & Gutter 30"	86.9	TON
		Concrete Curb & Gutter 30" Median	171.8	TON
		Aggregate Base	1009.4	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 93+10 - 66' Lt to 93+22 - 48' Lt	22	LF
202	0235	REMOVAL OF CATCH BASIN		
		Sta 93+10 - 66' Lt	1	EA



LEGEND

Sawcut		Removal of Pipe	
Removal of Pavement		Removal of Storm Structure	
Removal of Trees		Remove Hydrant	
Removal of Shrubs		Remove Gate Valve	

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Removals

32nd Avenue S

Sta 92+78 to 98+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	2

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 10"	394.8	TON
		Concrete Pavement 12"	1070.9	TON
		Concrete Sidewalk	230.3	TON
		Concrete Median	26.9	TON
		Colored Stamped Concrete	54.2	TON
		Concrete Curb & Gutter 30"	25.0	TON
		Concrete Curb & Gutter 24"	137.1	TON
		Concrete Curb & Gutter 30" Median	63.7	TON
		Concrete Curb & Gutter 24" Median	101.7	TON
		Aggregate Base	1553.5	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 98+79 - 78' Lt to 99+06 - 56' Lt	35	LF
		Sta 98+84 - 61' Lt to 98+84 - 38' Lt	23	LF
		Sta 98+81 - 38' Lt to 98+86 - 38' Lt	5	LF
		Sta 98+91 - 60' Rt to 98+93 - 79' Rt	20	LF
		Sta 101+79 - 51' Rt to 101+80 - 46' Rt	5	LF
202	0230	REMOVAL OF INLETS		
		Sta 99+06 - 56' Lt	1	EA
202	0235	REMOVAL OF CATCH BASIN		
		Sta 98+79 - 78' Lt	1	EA
		Sta 98+93 - 79' Rt	1	EA
724	0270	REMOVE GATE VALVE & BOX		
		Sta 98+84 - 43' Lt	1	EA
		Sta 101+80 - 48' Rt	1	EA
724	0430	REMOVE HYDRANT		
		Sta 98+83 - 60' Lt	1	EA
		Sta 101+79 - 51' Rt	1	EA

Note: Concrete pavement removal is 12" unless otherwise noted.

Removals

32nd Avenue S

Sta 98+00 to 104+00

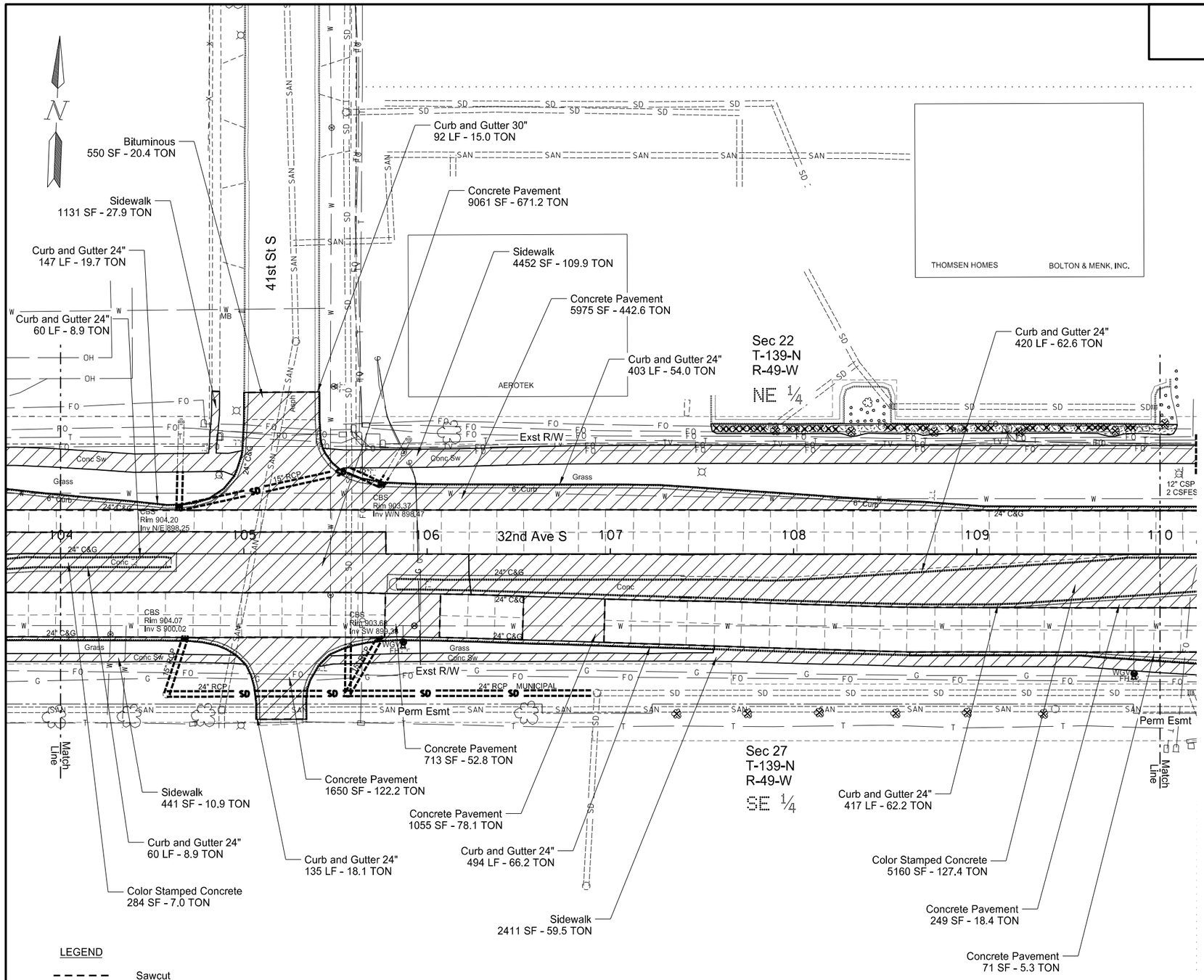
LEGEND

- Sawcut
- Removal of Pavement
- Removal of Trees
- Removal of Shrubs
- Removal of Pipe
- Removal of Storm Structure
- Remove Hydrant
- Remove Gate Valve

11/17/2016 7:09:14 AM mike.johnson T:\Projects\2015\15.103.0105 Fargo 32nd Avenue South Reconstruction\80984155.152\Design\040\040RM_002.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	3

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 12"	1390.6	TON
		Bituminous Pavement	20.4	TON
		Concrete Sidewalk	208.2	TON
		Colored Stamped Concrete	134.4	TON
		Concrete Curb & Gutter 30"	15.0	TON
		Concrete Curb & Gutter 24"	158.0	TON
		Concrete Curb & Gutter 24" Median	142.6	TON
		Aggregate Base	1492.1	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 104+58 - 77' Rt to 104+68 - 46' Rt	32	LF
		Sta 104+58 - 77' Rt to 105+57 - 76' Rt	99	LF
		Sta 104+65 - 25' Lt to 104+65 - 45' Lt	20	LF
		Sta 104+65 - 25' Lt to 105+58 - 46' Lt	95	LF
		Sta 105+57 - 76' Rt to 105+57 - 49' Rt	27	LF
		Sta 105+57 - 76' Rt to 105+74 - 47' Rt	34	LF
		Sta 105+57 - 76' Rt to 106+93 - 76' Rt	136	LF
		Sta 105+58 - 46' Lt to 105+75 - 38' Lt	19	LF
		Sta 105+75 - 38' Lt to 105+78 - 42' Lt	6	LF
		Sta 105+84 - 39' Rt to 105+89 - 39' Rt	5	LF
		Sta 105+87 - 50' Rt to 105+87 - 39' Rt	11	LF
		Sta 109+86 - 67' Rt to 109+86 - 62' Rt	5	LF
202	0230	REMOVAL OF INLETS		
		Sta 104+65 - 25' Lt	1	EA
		Sta 104+68 - 46' Rt	1	EA
		Sta 105+74 - 47' Rt	1	EA
		Sta 105+75 - 38' Lt	1	EA
724	0270	REMOVE GATE VALVE & BOX		
		Sta 105+87 - 48' Rt	1	EA
		Sta 109+86 - 65' Rt	1	EA
724	0430	REMOVE HYDRANT		
		Sta 105+87 - 50' Rt	1	EA
		Sta 109+86 - 67' Rt	1	EA



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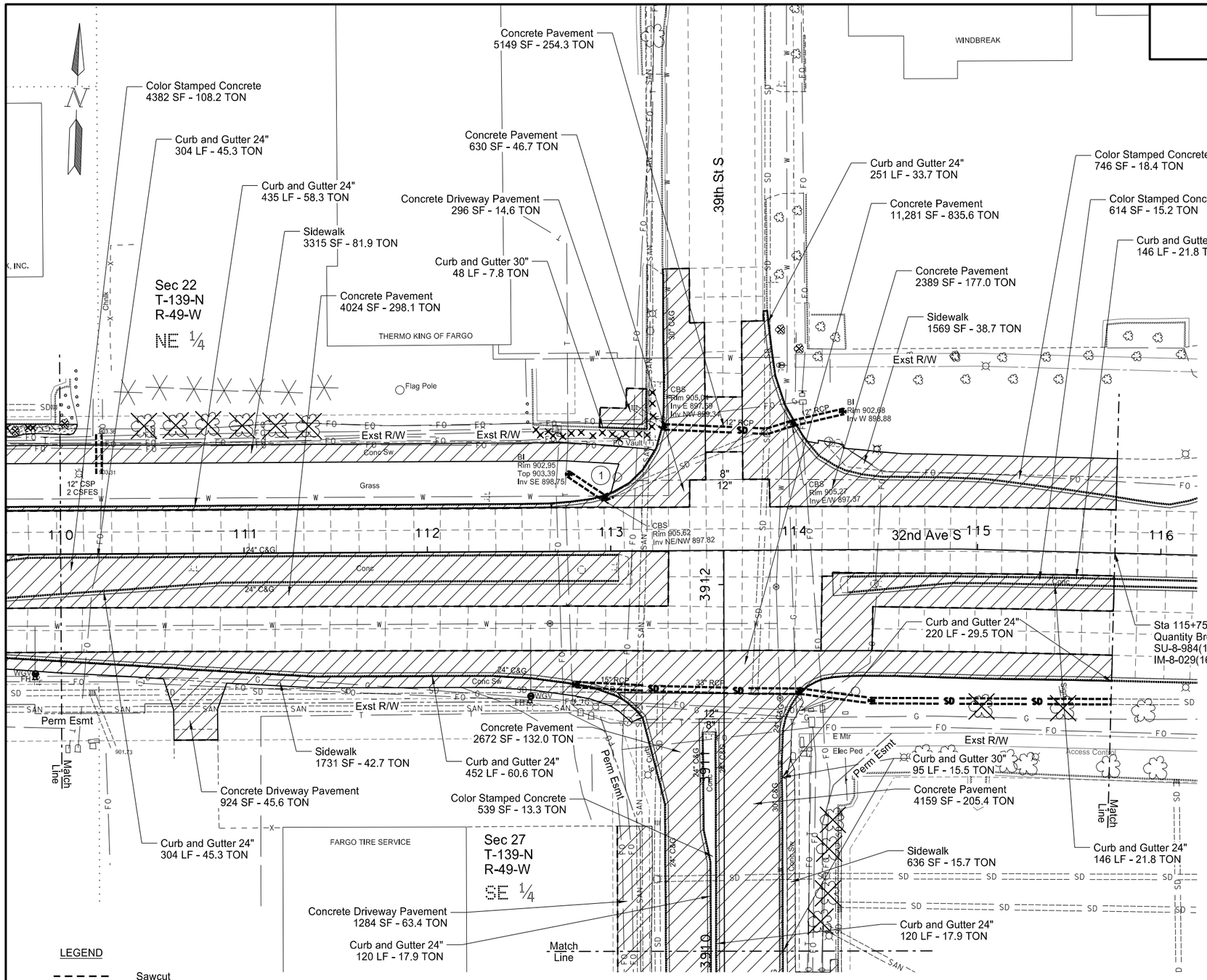
Removals

32nd Avenue S

Sta 104+00 to 110+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	4



SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 12"	1357.4	TON
		Concrete Pavement 8"	591.7	TON
		Concrete Driveway Pavement	123.6	TON
		Concrete Sidewalk	179.0	TON
		Colored Stamped Concrete	155.1	TON
		Concrete Curb & Gutter 30"	23.3	TON
		Concrete Curb & Gutter 24"	182.1	TON
		Concrete Curb & Gutter 24" Median	170.0	TON
		Aggregate Base	2295.8	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 110+21 - 66' Lt to 110+21 - 44' Lt	22	LF
		Sta 112+56 - 79' Rt to 112+56 - 70' Rt	12	LF
		Sta 112+77 - 42' Lt to 112+97 - 29' Lt	23	LF
		Sta 112+81 - 73' Rt to 113+27 - 75' Rt	46	LF
		Sta 112+97 - 29' Lt to 113+01 - 31 Lt	5	LF
		Sta 113+27 - 75' Rt to 113+78 - 77' Rt	52	LF
		Sta 113+27 - 69' Rt to 113+30 - 68' Lt	3	LF
		Sta 113+30 - 68' Lt to 113+86 - 65' Lt	56	LF
		Sta 113+78 - 77' Rt to 114+03 - 83' Rt	24	LF
		Sta 113+86 - 65' Lt to 114+00 - 69' Lt	15	LF
		Sta 114+00 - 69' Lt to 114+27 - 75' Lt	28	LF
		Sta 114+03 - 77' Rt to 114+42 - 82' Rt	40	LF
		Sta 114+42 - 82' Rt to 115+75 - 81' Rt	131	LF
202	0230	REMOVAL OF INLETS		
		Sta 112+81 - 73' Rt	1	EA
		Sta 112+97 - 29' Lt	1	EA
		Sta 113+30 - 68' Lt	1	EA
		Sta 114+00 - 69' Lt	1	EA
		Sta 114+03 - 77' Rt	1	EA
202	0235	REMOVAL OF CATCH BASIN		
		Sta 112+77 - 42' Lt	1	EA
		Sta 114+27 - 75' Lt	1	EA
		Sta 114+42 - 82' Rt	1	EA
714	9680	PLUG PIPE-ALL TYPES & SIZES		
		Sta 113+01 - 31 Lt	1	EA
724	0270	REMOVE GATE VALVE & BOX		
		Sta 112+56 - 79' Rt	1	EA
724	0430	REMOVE HYDRANT		
		Sta 112+55 - 82' Rt	1	EA

Notes:

(1) Plug abandoned 12" RCP storm sewer at sta 113+01 - 31' Lt

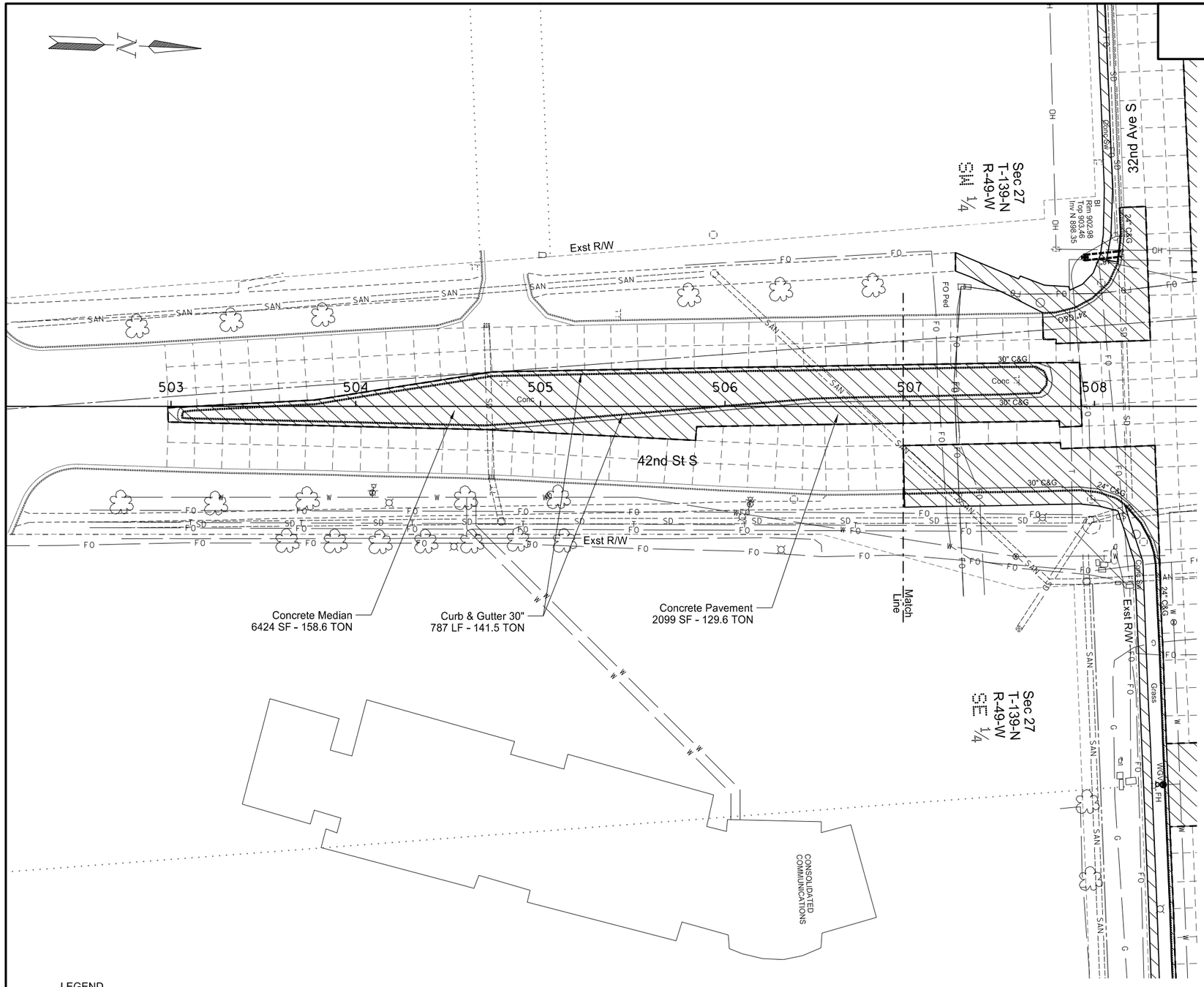
Removals

32nd Avenue S

Sta 110+00 to 115+75

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	5

SPEC CODE	BID ITEM	QTY	UNIT
202 0136	REMOVAL OF PAVEMENT		
	Concrete Pavement 10"	129.6	TON
	Concrete Median	158.6	TON
	Concrete Curb & Gutter 30" Median	141.5	TON
	Aggregate Base	384.0	TON



LEGEND

Sawcut		Removal of Pipe	
Removal of Pavement		Removal of Storm Structure	
Removal of Trees		Remove Hydrant	
Removal of Shrubs		Remove Gate Valve	

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Removals

42nd Street South

Sta 502+98 to 506+96

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	6

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 8"	1031.4	TON
		Bituminous Pavement	315.4	TON
		Concrete Driveway Pavement	382.9	TON
		Concrete Sidewalk	94.7	TON
		Color Stamped Concrete	4.5	TON
		Concrete Curb & Gutter 30"	99.7	TON
		Concrete Curb & Gutter 24"	111.3	TON
		Concrete Curb & Gutter 24" Median	23.0	TON
		Aggregate Base	1891.1	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 3907+88 - 34' Rt to 3907+88 - 30' Rt	5	LF
		Sta 3908+27 - 40' Rt to 3908+27 - 19' Rt	20	LF
		Sta 3908+27 - 19' Rt to 3908+27 - 20' Lt	40	LF
		Sta 3908+27 - 20' Lt to 3908+29 - 37 ' Lt	17	LF
202	0230	REMOVAL OF INLETS		
		Sta 3908+27 - 19' Rt	1	EA
		Sta 3908+27 - 20' Lt	1	EA
724	0270	REMOVE GATE VALVE & BOX		
		Sta 3907+88 - 33' Rt	1	EA
724	0430	REMOVE HYDRANT		
		Sta 3907+88 - 35' Rt	1	EA

HERE WE GO CHILDCARE

CONSOLIDATED COMMUNICATIONS

Sec 27
T-139-N
R-49-W
SE 1/4

39th St S

3905 3906 3907 3908 3909 3910

Curb and Gutter 30"
24 LF - 3.9 TON

Bituminous
120 SF - 4.4 TON

Bituminous
150 SF - 5.6 TON

Curb and Gutter 24"
321 LF - 43.0 TON

Concrete Driveway Pavement
5189 SF - 256.2 TON

Color Stamped Concrete
184 SF - 4.5 TON

Curb and Gutter 30"
86 LF - 14.0 TON

Bituminous
1050 SF - 38.9 TON

Bituminous
235 SF - 8.7 TON

Concrete Driveway Pavement
466 SF - 23.0 TON

Curb and Gutter 24"
154 LF - 23.0 TON

Curb and Gutter 24"
154 LF - 20.6 TON

Concrete Driveway Pavement
526 SF - 26.0 TON

Exst R/W

Perm Esmt

Sidewalk
1014 SF - 25.0 TON

Sidewalk
1189 SF - 29.4 TON

Concrete Pavement
20,886 SF - 1031.4 TON

Concrete Driveway Pavement
800 SF - 39.5 TON

Curb and Gutter 24"
71 LF - 9.5 TON

Bituminous
1401 SF - 51.9 TON

Curb and Gutter 30"
432 LF - 70.5 TON

Concrete Driveway Pavement
774 SF - 38.2 TON

Bituminous
5560 SF - 205.9 TON

Curb and Gutter 24"
143 LF - 19.2 TON

Sidewalk
221 SF - 5.5 TON

Curb and Gutter 24"
16 LF - 2.1 TON

Curb and Gutter 24"
126 LF - 16.9 TON

Sidewalk
839 SF - 20.7 TON

Sidewalk
570 SF - 14.1 TON

Curb and Gutter 30"
69 LF - 11.3 TON

Match Line

LEGEND

Sawcut		Removal of Pipe	
Removal of Pavement		Removal of Storm Structure	
Removal of Trees		Remove Hydrant	
Removal of Shrubs		Remove Gate Valve	

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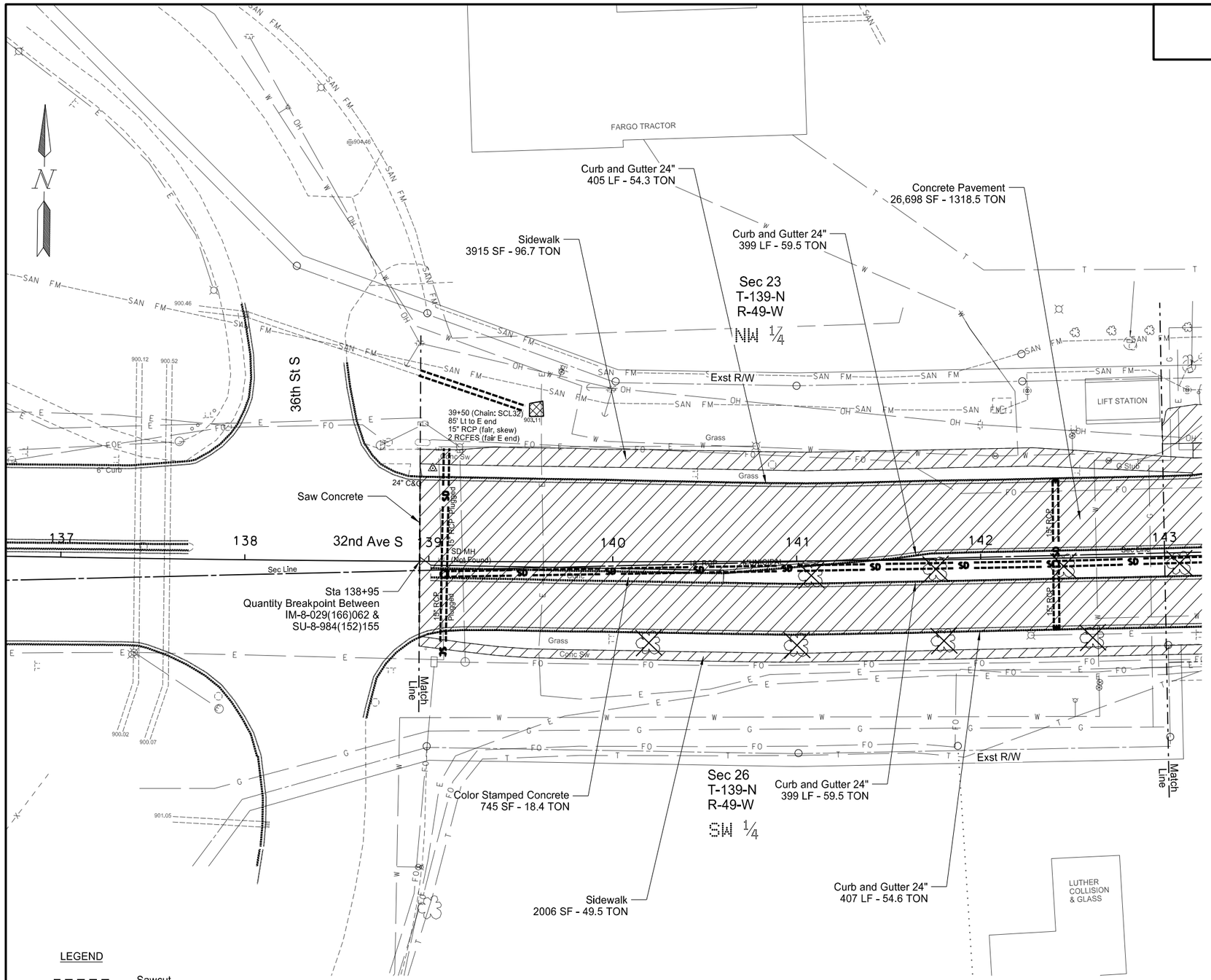
Removals

39th Street SW

Sta 3904+95 to 3910+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	7

SPEC CODE	BID ITEM	QTY	UNIT
202 0136	REMOVAL OF PAVEMENT		
	Concrete Pavement 8"	1318.5	TON
	Concrete Sidewalk	146.2	TON
	Colored Stamped Concrete	18.4	TON
	Concrete Curb & Gutter 24"	108.9	TON
	Concrete Curb & Gutter 24" Median	119.0	TON
	Aggregate Base	1748.6	TON
202 0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
	Sta 138+95 - 102' Lt to 139+52 - 83' Lt	60	LF
	Sta 139+08 - 51' Rt to 139+08 - 7' Rt	45	LF
	Sta 139+08 - 7' Rt to 139+09 - 61' Lt	68	LF
	Sta 139+08 - 7' Rt to 142+40 - 3' Rt	332	LF
	Sta 142+41 - 39' Rt to 142+41 - 42' Lt	82	LF
	Sta 142+40 - 3' Rt to 143+00 - 3' Rt	60	LF
202 0210	REMOVAL OF MANHOLES		
	Sta 139+08 - 7' Rt	1	EA
	Sta 142+40 - 3' Rt	1	EA
202 0230	REMOVAL OF INLETS		
	Sta 142+41 - 39' Rt	1	EA
	Sta 142+41 - 42' Lt	1	EA
202 0400	REMOVAL OF RIPRAP - LOOSE ROCK		
	Sta 139+58 - 83' Lt	4	CY



LEGEND

- Sawcut
- Removal of Pavement
- Removal of Riprap
- Removal of Trees
- Removal of Shrubs
- Removal of Pipe
- Removal of Storm Structure
- Remove Hydrant
- Remove Gate Valve

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Removals

32nd Avenue S

Sta 138+95 to 143+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	8

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 8"	1893.9	TON
		Bituminous Pavement	320.7	TON
		Concrete Driveway Pavement	90.6	TON
		Concrete Sidewalk	185.0	TON
		Concrete Median	15.1	TON
		Concrete Curb & Gutter 24"	221.8	TON
		Concrete Curb & Gutter 24" Median	159.7	TON
		Aggregate Base	2891.6	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 143+00 - 3' Rt to 142+41 - 1' Rt	240	LF
		Sta 145+23 - 52' Lt to 145+26 - 32' Lt	20	LF
		Sta 145+26 - 32' Lt to 145+41 - 1' Rt	36	LF
		Sta 145+26 - 38' Rt to 145+41 - 1' Rt	40	LF
		Sta 145+28 - 41' Rt to 145+28 - 39' Rt	4	LF
		Sta 145+41 - 1' Rt to 146+12 - 4' Rt	72	LF
		Sta 146+01 - 65' Rt to 146+05 - 68' Rt	5	LF
		Sta 146+01 - 65' Rt to 146+29 - 36' Rt	41	LF
		Sta 146+01 - 66' Lt to 146+07 - 66' Lt	6	LF
		Sta 146+08 - 58' Lt to 146+24 - 78' Lt	25	LF
		Sta 146+08 - 58' Lt to 146+30 - 32' Lt	34	LF
		Sta 146+12 - 5' Rt to 146+29 - 36' Rt	35	LF
		Sta 146+12 - 5' Rt to 146+30 - 32' Lt	41	LF
		Sta 146+24 - 78' Lt to 146+43 - 62' Lt	25	LF
		Sta 148+47 - 64' Rt to 148+48 - 32' Rt	32	LF
		Sta 148+92 - 42' Rt to 148+92 - 39' Rt	4	LF
202	0210	REMOVAL OF MANHOLES		
		Sta 146+01 - 65' Rt	1	EA
		Sta 146+08 - 58' Lt	1	EA
202	0230	REMOVAL OF INLETS		
		Sta 145+26 - 37' Rt	1	EA
		Sta 145+26 - 32' Lt	1	EA
		Sta 146+12 - 4' Rt	1	EA
		Sta 146+24 - 78' Lt	1	EA
		Sta 146+29 - 36' Rt	1	EA
		Sta 146+29 - 32' Lt	1	EA
		Sta 146+31 - 28' Lt	1	EA
		Sta 146+43 - 62' Lt	1	EA
202	0312	REMOVE EXISTING FENCE		
		Sta 148+05 - 72' Rt to 148+90 - 67' Rt	107	LF
724	0270	REMOVE GATE VALVE & BOX		
		Sta 145+28 - 41' Rt	1	EA
		Sta 146+01 - 66' Lt	1	EA
		Sta 148+48 - 42' Rt	1	EA
		Sta 148+92 - 41' Rt	1	EA
724	0430	REMOVE HYDRANT		
		Sta 145+28 - 43' Rt	1	EA
		Sta 146+00 - 66' Lt	1	EA
		Sta 148+92 - 43' Rt	1	EA

Bituminous
591 SF - 21.9 TON

Concrete Driveway Pavement
1609 SF - 79.5 TON

Curb and Gutter 24"
297 LF - 39.8 TON

Sidewalk
2278 SF - 56.3 TON

Curb and Gutter 24"
242 LF - 36.1 TON

Concrete Pavement
38,349 SF - 1893.9 TON

Sec 23
T-139-N
R-49-W
NW 1/4

Curb and Gutter 24"
342 LF - 45.9 TON

Bituminous
661 SF - 24.5 TON

Sidewalk
2513 SF - 62.0 TON

Bituminous
5956 SF - 220.6 TON

Curb and Gutter 24"
586 LF - 87.4 TON

Curb and Gutter 24"
304 SF - 40.8 TON

Sidewalk
1120 SF - 27.7 TON

Concrete Driveway Pavement
224 SF - 11.1 TON

Curb and Gutter 24"
285 LF - 38.2 TON

Curb and Gutter 24"
53 LF - 7.1 TON

Concrete Median
324 SF - 8.0 TON

Sidewalk
225 SF - 5.6 TON

Bituminous
727 SF - 26.9 TON

Sec 26
T-139-N
R-49-W
SW 1/4

Curb and Gutter 24"
294 LF - 39.4 TON

Concrete Median
286 SF - 7.1 TON

Sidewalk
1353 SF - 33.4 TON

Curb and Gutter 24"
243 LF - 36.2 TON

Bituminous
723 SF - 26.8 TON

Curb and Gutter 24"
79 LF - 10.6 TON

LEGEND

- Sawcut
- Removal of Pavement
- Removal of Landscape Rock
- Removal of Trees
- Removal of Shrubs
- Removal of Pipe
- Removal of Storm Structure
- Remove Hydrant
- Remove Gate Valve

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Removals

32nd Avenue S

Sta 143+00 to 149+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	40	9

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Concrete Pavement 8"	1703.4	TON
		Bituminous Pavement	26.1	TON
		Concrete Sidewalk	120.5	TON
		Concrete Median	22.9	TON
		Concrete Curb & Gutter 24"	157.8	TON
		Concrete Curb & Gutter 24" Median	239.6	TON
		Aggregate Base	2364.4	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 151+49 - 34' Rt to 151+66 - 3' Lt	40	LF
		Sta 151+52 - 32' Rt to 151+57 - 32' Rt	5	LF
		Sta 151+54 - 51' Rt to 151+54 - 32' Rt	9	LF
		Sta 152+20 - 62' Rt to 152+30 - 64' Rt	9	LF
202	0230	REMOVAL OF INLETS		
		Sta 151+48 - 33' Rt	1	EA
		Sta 151+50 - 33' Rt	1	EA
		Sta 152+20 - 62' Rt	1	EA
724	0270	REMOVE GATE VALVE & BOX		
		Sta 151+54 - 41' Rt	1	EA
724	0430	REMOVE HYDRANT		
		Sta 151+54 - 44' Rt	1	EA

N

32nd St S

32nd Ave S

BANK OF THE WEST

ALERUS FINANCIAL

FARGO RENTALL INC

Sec 23
T-139-N
R-49-W
NW 1/4

Sec 23
T-139-N
R-49-W
NE 1/4

Sec 26
T-139-N
R-49-W
SW 1/4

Sec 26
T-139-N
R-49-W
SE 1/4

Sec 2
T-139

NE

Curb and Gutter 24"
540 LF - 80.5 TON

Concrete Median
302 SF - 7.5 TON

Curb and Gutter 24"
314 LF - 42.1 TON

Sidewalk
2316 SF - 57.2 TON

Sidewalk
704 SF - 17.4 TON

Curb and Gutter
534 LF - 79.6 TON

Curb and Gutter 24"
272 LF - 36.5 TON

Perm Esmt
Exst R/W

Concrete Median
313 SF - 7.7 TON

Concrete Median
311 SF - 7.7 TON

End Project
Sta 157+72
SU-8-984(152)155

Curb and Gutter
533 LF - 79.5 TON

Curb and Gutter 24"
273 LF - 36.6 TON

Concrete Pavement
34,493 SF - 1703.4 TON

Sidewalk
1653 SF - 40.8 TON

Curb and Gutter 24"
318 SF - 42.6 TON

Bituminous
704 SF - 26.1 TON

Sidewalk
206 SF - 5.1 TON

Match Line

149 150 151 152 153 154 155 156 157

Sec Line

LEGEND

- Sawcut
- Removal of Pavement
- Removal of Landscape Rock
- Removal of Trees
- Removal of Shrubs
- Removal of Pipe
- Removal of Storm Structure
- Remove Hydrant
- Remove Gate Valve

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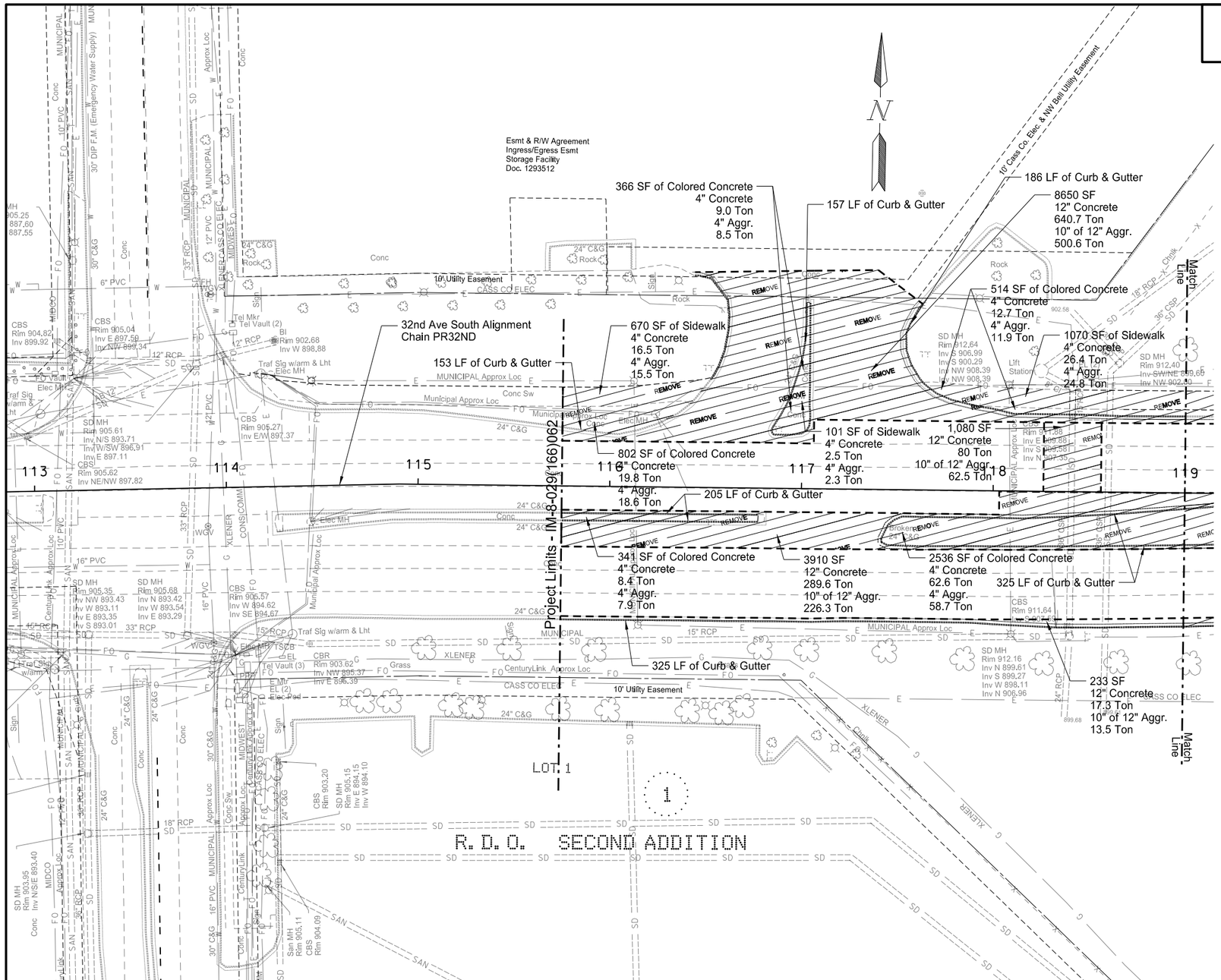
Removals

32nd Avenue S

Sta 149+00 to 157+72

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	10

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	1,028	TON
		Sidewalk	46	TON
		Colored Stamped Concrete	113	TON
		Concrete Curb & Gutter (1,351 LF)	214	TON
		Aggregate	951	TON
		Total	2,352	TON



LEGEND

REMOVE Removal of Pavement

- - - - - - - Sawcut

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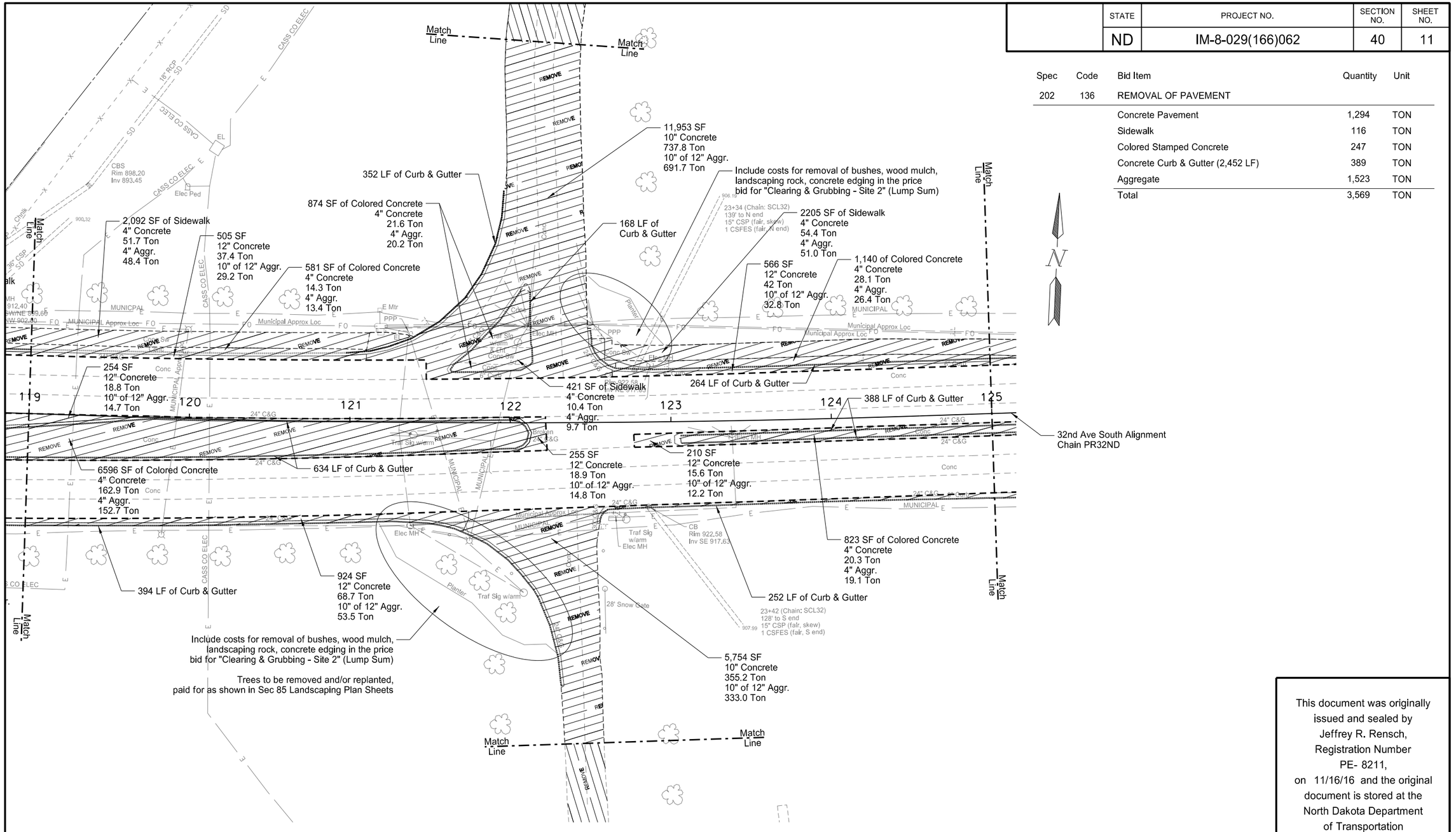
Removals

32nd Avenue South

Sta 115+75 to 119+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	11

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	1,294	TON
		Sidewalk	116	TON
		Colored Stamped Concrete	247	TON
		Concrete Curb & Gutter (2,452 LF)	389	TON
		Aggregate	1,523	TON
		Total	3,569	TON



LEGEND

REM Removal of Pavement

Sawcut

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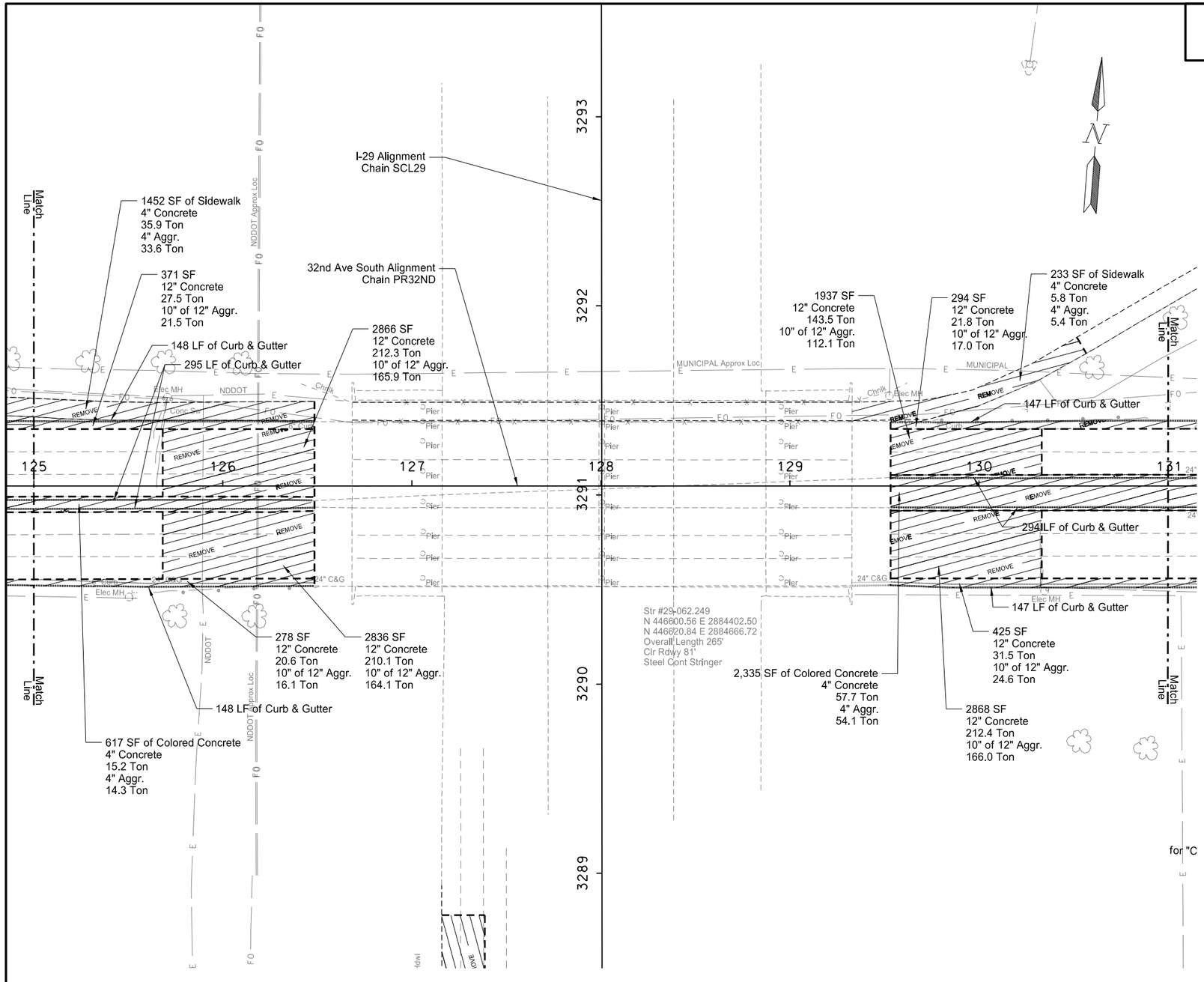
Removals

32nd Avenue South

Sta 119+00 to 125+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	12

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	880	TON
		Sidewalk	42	TON
		Colored Stamped Concrete	73	TON
		Concrete Curb & Gutter (1,179 LF)	187	TON
		Aggregate	795	TON
		Total	1,977	TON



LEGEND

REMOVE Removal of Pavement

Sawcut

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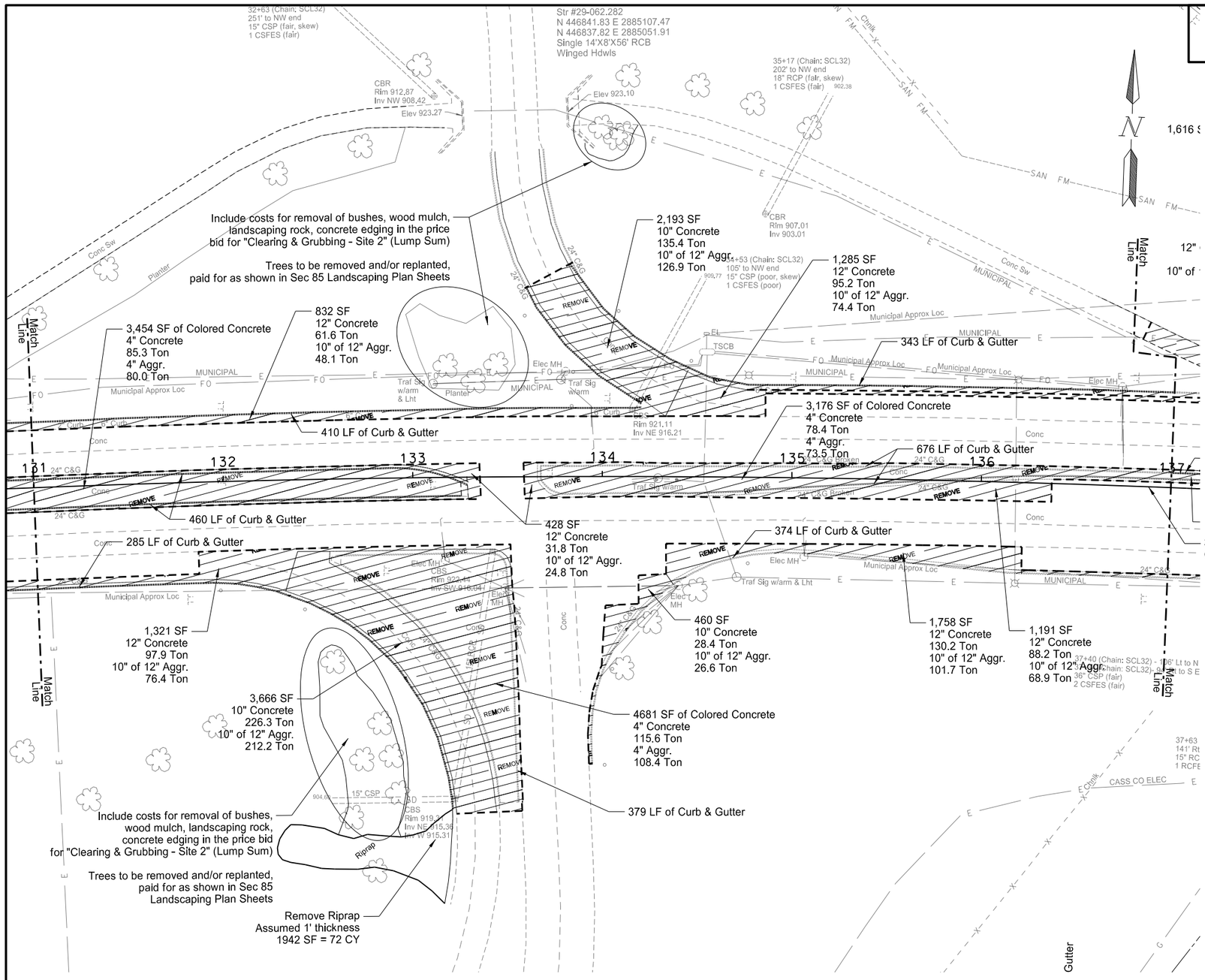
Removals

32nd Avenue South

Sta 125+00 to 131+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	13

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	895	TON
		Colored Stamped Concrete	279	TON
		Concrete Curb & Gutter (2,927 LF)	464	TON
		Aggregate	1,022	TON
		Total	2,660	TON
202	0400	REMOVAL OF RIPRAP - LOOSE ROCK		
		Riprap	72	CY



LEGEND

RE — Removal of Pavement

Sawcut

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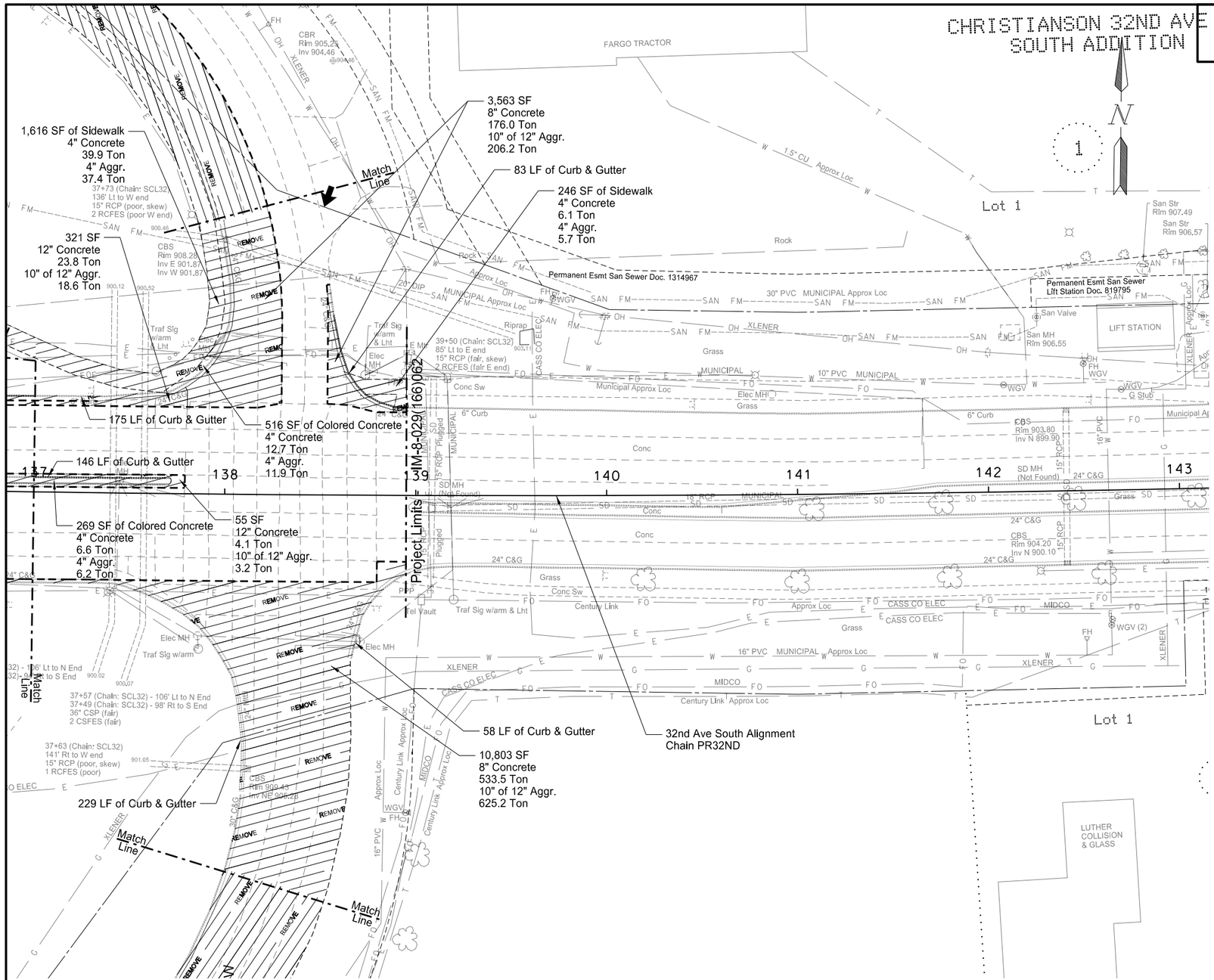
Removals

32nd Avenue South

Sta 131+00 to 137+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	14

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	737	TON
		Sidewalk	46	TON
		Colored Stamped Concrete	19	TON
		Concrete Curb & Gutter (691 LF)	110	TON
		Aggregate	914	TON
		Total	1,826	TON



LEGEND

Removal of Pavement

Sawcut

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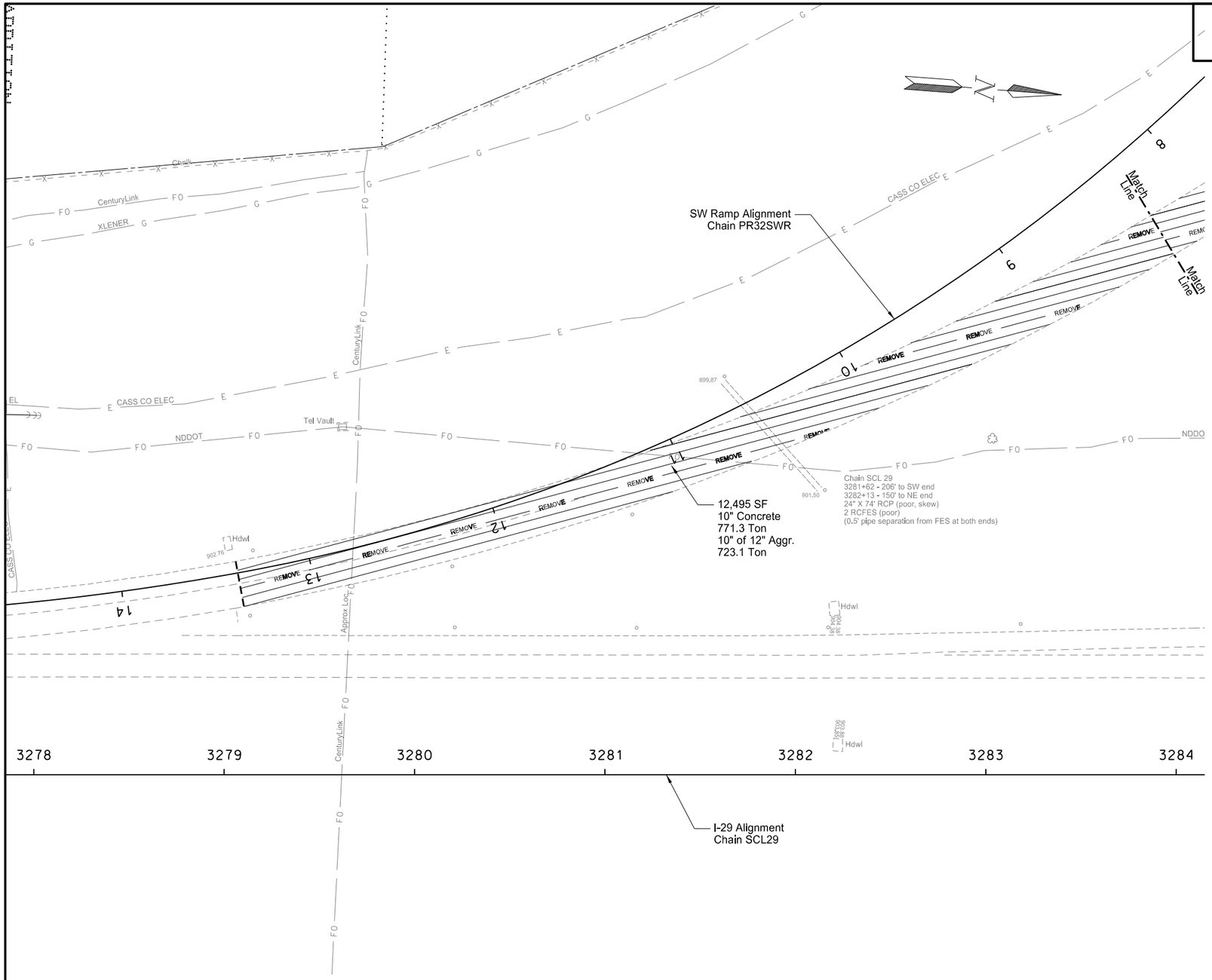
Removals

32nd Avenue South

Sta 137+00 to 138+95

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	15

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	771	TON
		Aggregate	723	TON
		Total	1,494	TON



LEGEND

Removal of Pavement

Sawcut

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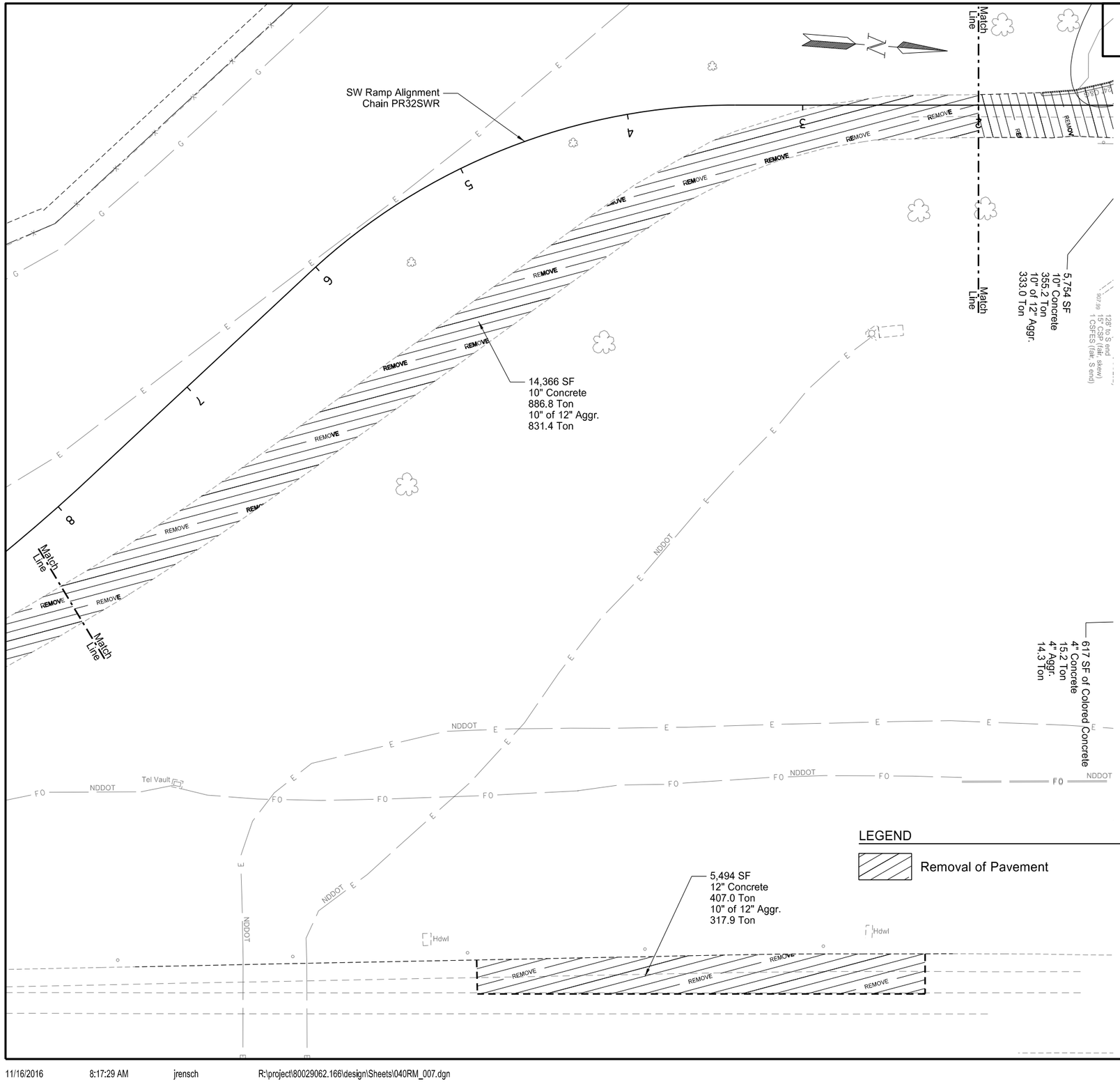
Removals

SW Ramp

Sta 8+00 to 13+38.30

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	16

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	1,294	TON
		Aggregate	1,149	TON
		Total	2,443	TON



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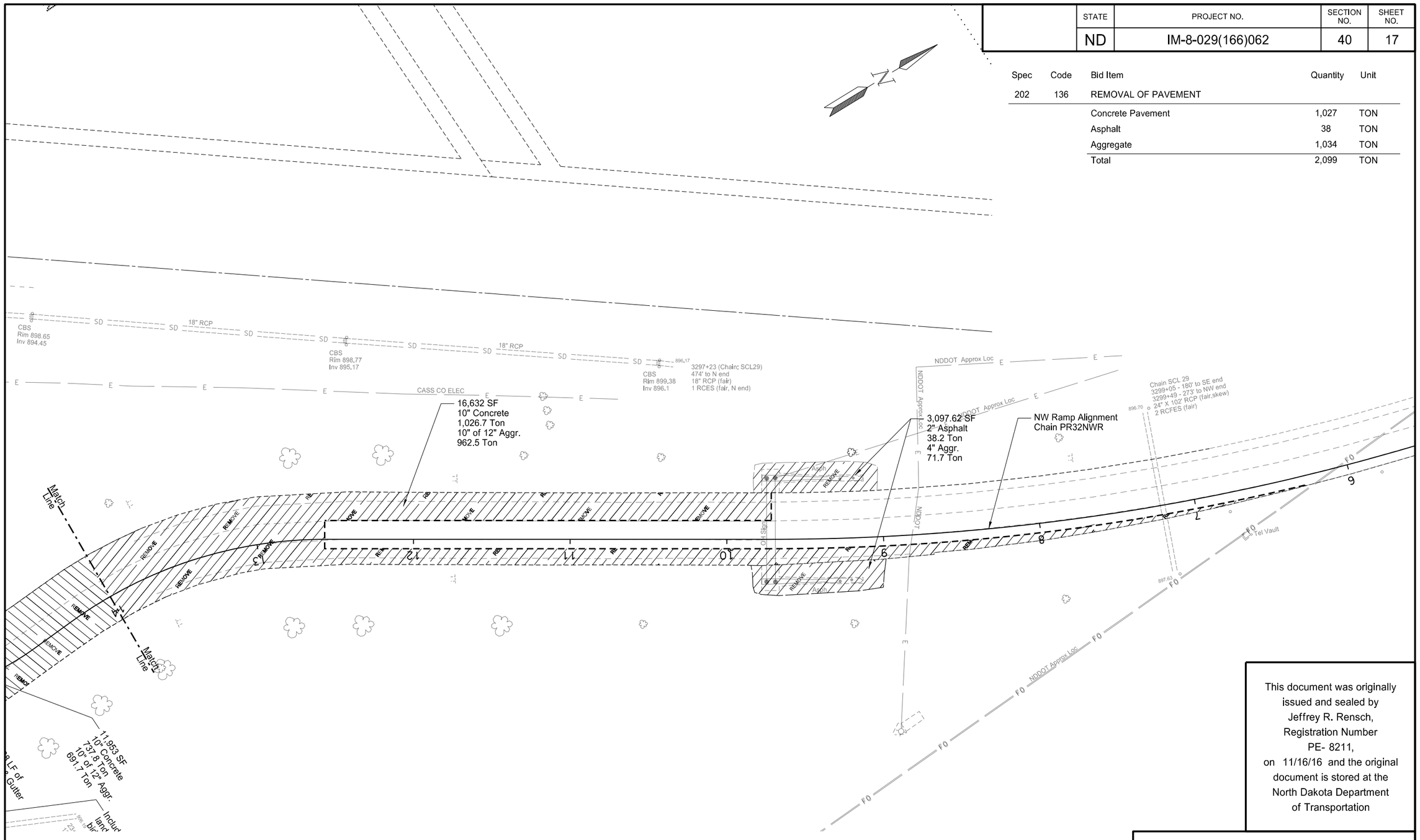
Removals

SW Ramp

Sta 2+00 to Sta 8+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	17

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	1,027	TON
		Asphalt	38	TON
		Aggregate	1,034	TON
		Total	2,099	TON



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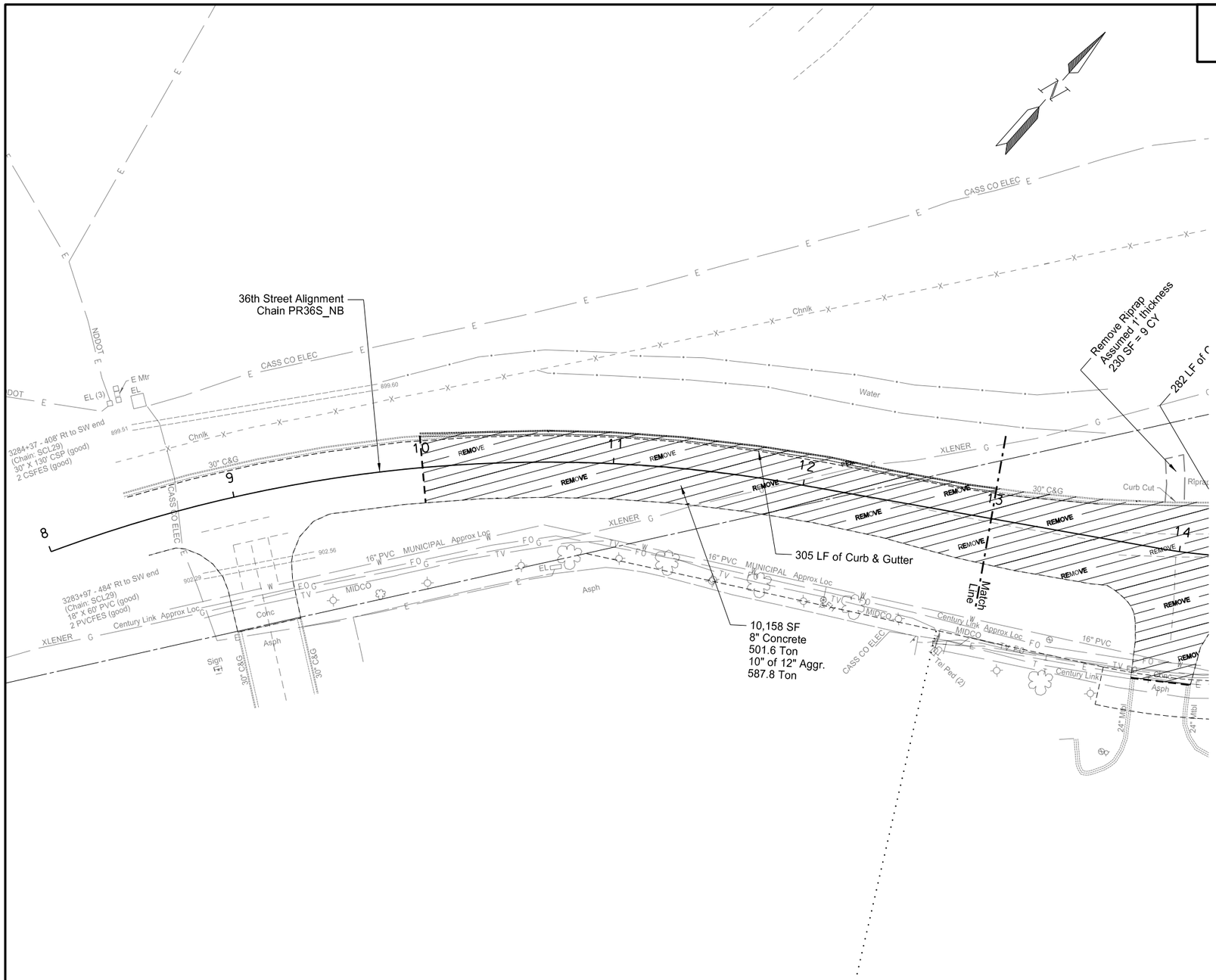
Removals

NW Ramp

Sta 6+00 to 14+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	18

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	502	TON
		Concrete Curb & Gutter (305 LF)	48	TON
		Aggregate	588	TON
		Total	1,138	TON



LEGEND

Removal of Pavement

Sawcut

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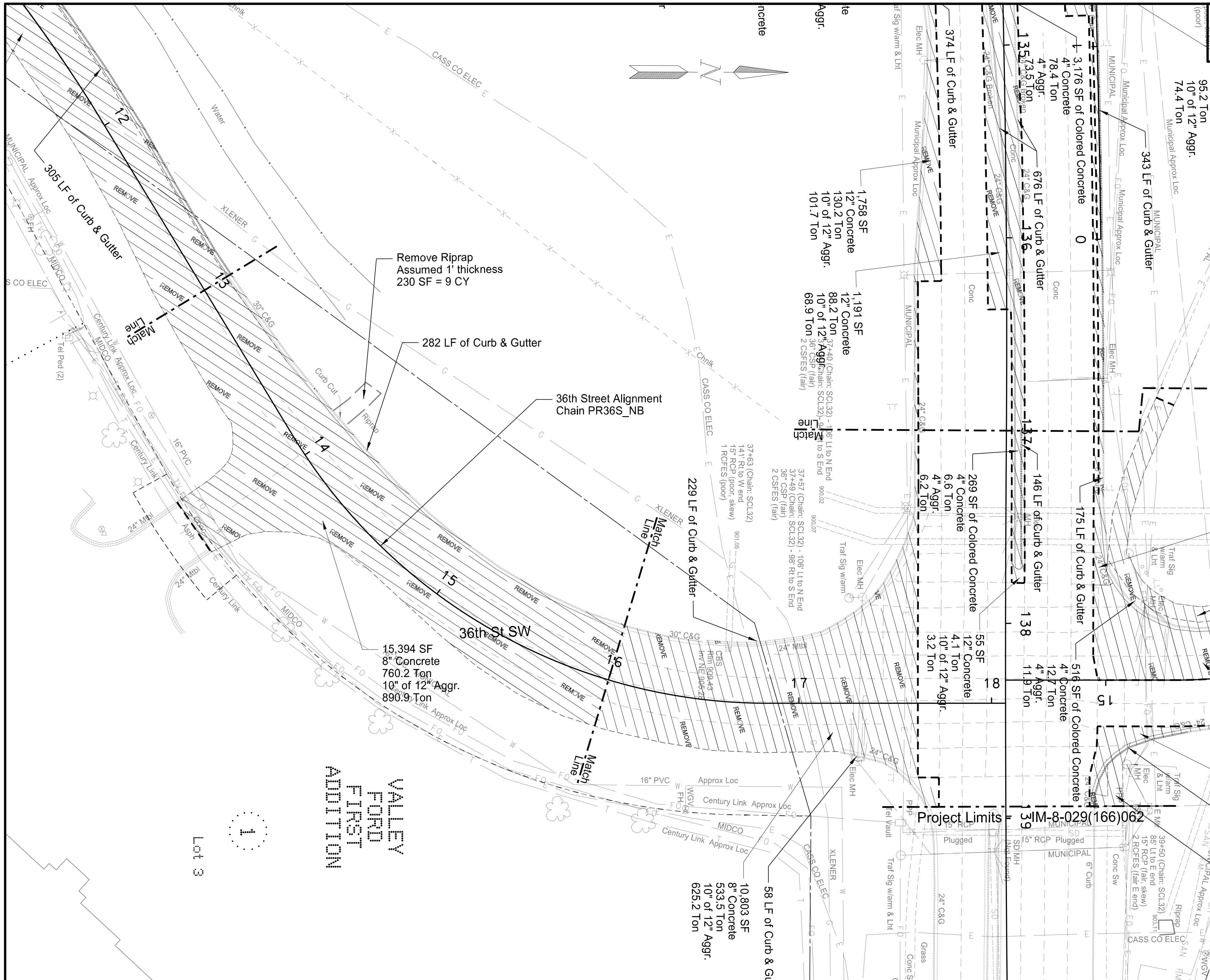
Removals

South Leg of 36th Street

Sta 10+00 to 13+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	40	19

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	760	TON
		Concrete Curb & Gutter (282 LF)	45	TON
		Aggregate	891	TON
		Total	1,696	TON
202	0400	REMOVAL OF RIPRAP - LOOSE ROCK		
		Riprap	9	CY



LEGEND

Removal of Pavement

Sawcut

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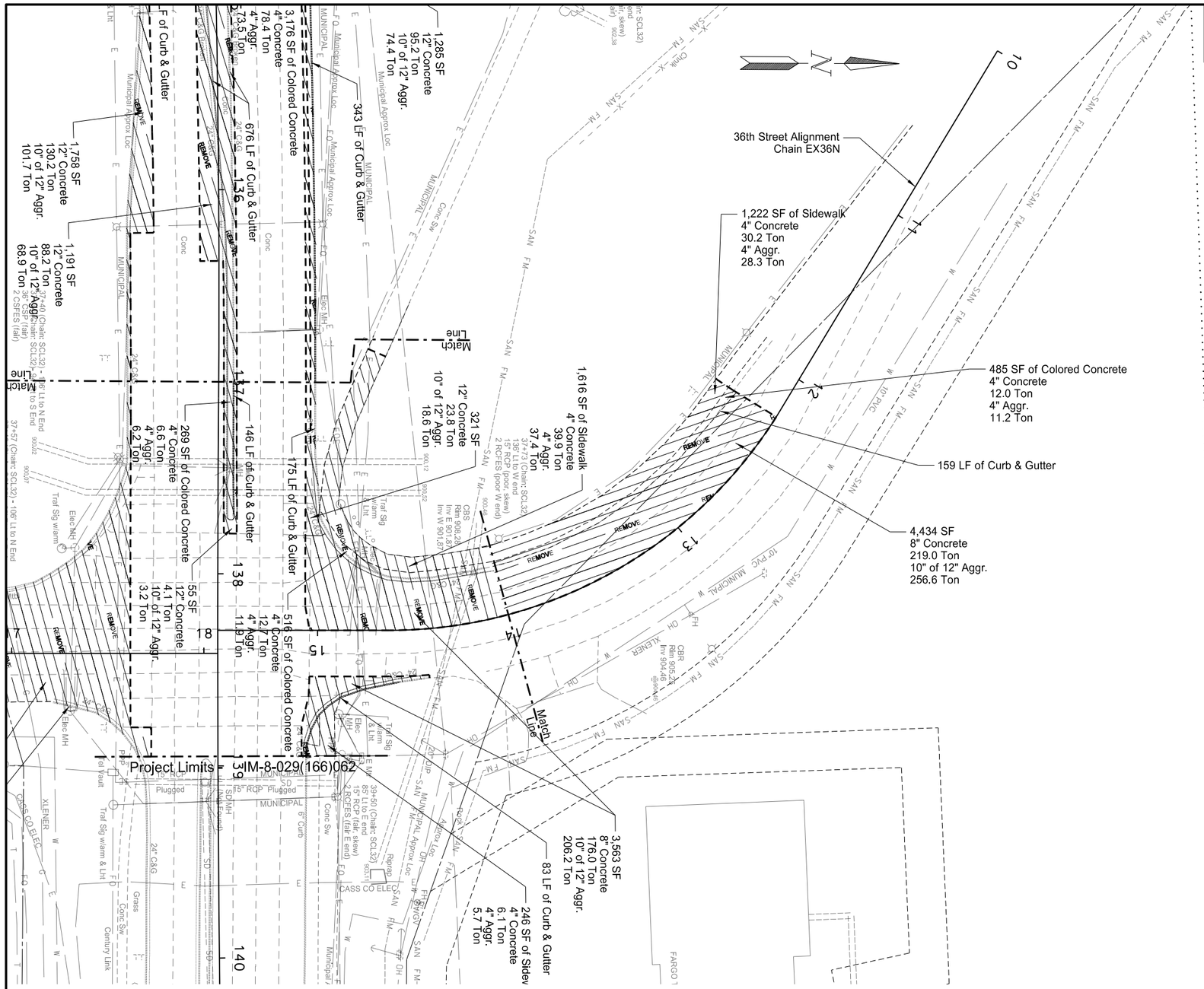
Removals

South Leg of 36th Street

Sta 13+00 to 16+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	20

Spec	Code	Bid Item	Quantity	Unit
202	136	REMOVAL OF PAVEMENT		
		Concrete Pavement	219	TON
		Sidewalk	30	TON
		Colored Stamped Concrete	12	TON
		Concrete Curb & Gutter (159 LF)	25	TON
		Aggregate	296	TON
		Total	582	TON



LEGEND

Removal of Pavement

Sawcut

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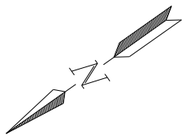
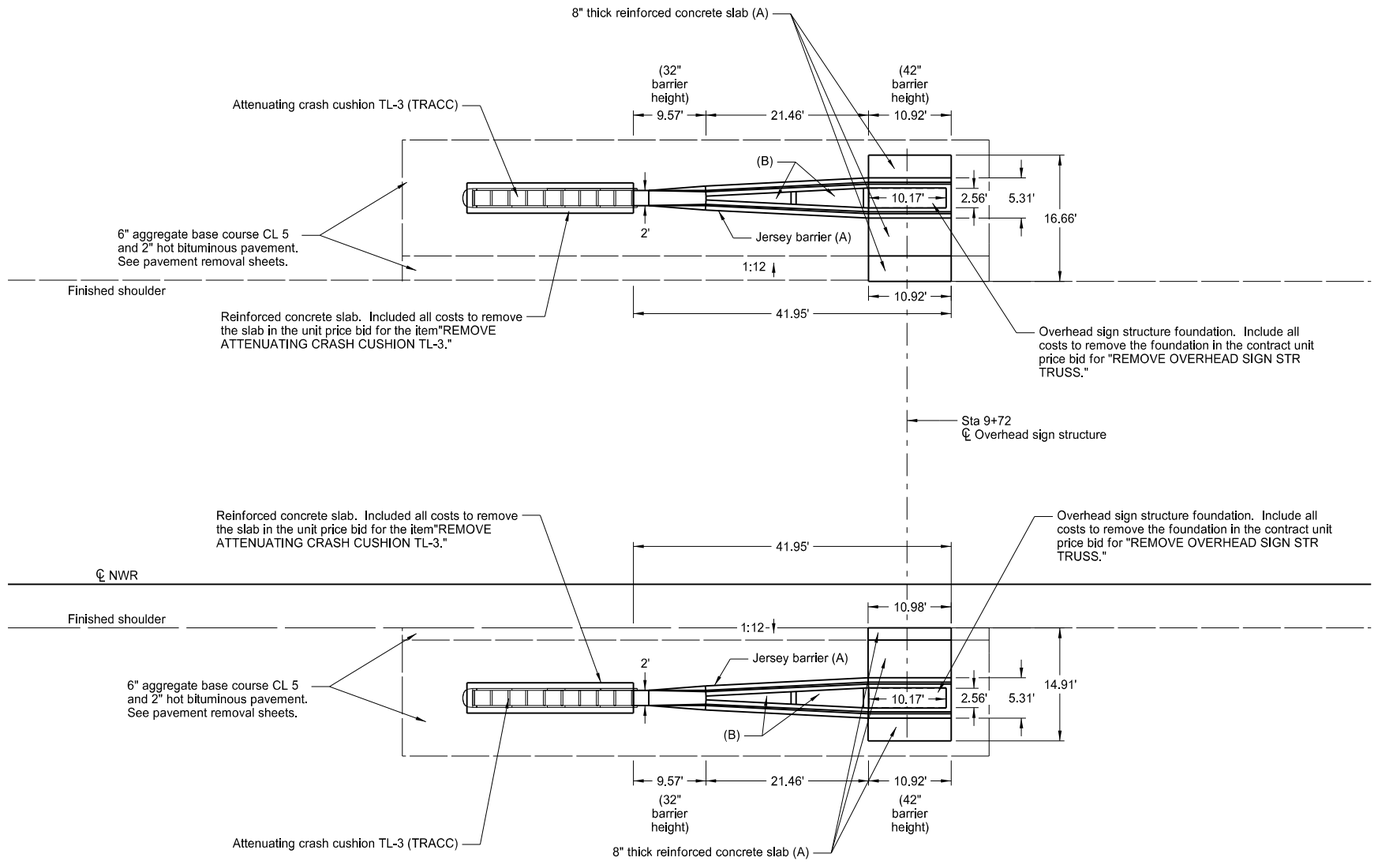
Removals

North Leg of 36th Street

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	40	21





(A) The jersey barriers and slabs are reinforced with No. 5 bars. The spacings are at 8" along centerline in both the jersey barrier and slab, and at 10" perpendicular to centerline in the slab.

Include all costs to remove the reinforced concrete jersey barriers and reinforced concrete slabs in the contract unit price bid for the item "REMOVAL OF CONCRETE."

(B) The void space between jersey barrier walls are filled with aggregate. The top 4" is capped with reinforced concrete.

Include all costs to remove the cap in the contract unit price bid for the item "REMOVAL OF CONCRETE."

Include all costs to remove the aggregate in the contract unit price bid for the item "REMOVAL OF PAVEMENT."

SPEC	CODE	BID ITEM		QTY	UNIT
202	0113	REMOVAL OF CONCRETE			
		Sta 9+72 NWR Rt		15.4	CY
		Sta 9+72 NWR Lt		14.3	CY
			Total	29.7	CY
202	0136	REMOVAL OF PAVEMENT			
		Sta 9+72 NWR Rt - Aggregate		7.2	Ton
		Sta 9+72 NWR Lt - Aggregate		7.2	Ton
			Total	14.4	Ton
764	9035	REMOVE ATTENUATING CRASH CUSHION TL-3			
		Sta 9+36 NWR Rt		1	Ea
		Sta 9+36 NWR Lt		1	Ea
			Total	2	Ea

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Reinforced Concrete Barrier, Reinforced Concrete Slab and Crash Cushion Removal Layout

Overhead Sign Structure Foundations
32nd Ave S - Sta 9+72 NW Ramp

I-29
Fargo

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	50	1

INLET AND MANHOLE ADJUSTMENT SUMMARY

Location (Station Offset or Manhole Inlet #)	Exst Grate Elev	Prop. Grate Elev	Adj. Height	Adjustment Bid Item		
				722 6160 ADJUST INLET	722 6200 ADJUST MANHOLE	722 6201 ADJUST MANHOLE SPECIAL
1	903.75	903.61	-0.14	1		
Sta 100+13.95 - 60.50' Lt	902.77	903.55	0.78			1
3	903.42	903.22	-0.20		1	
4	903.15	903.45	0.30		1	
6	902.78	902.68	-0.10	1		
7	904.64	904.85	0.21		1	
8	904.38	903.56	-0.82			1
Sta 104+65.81 - 72.11' Lt	903.86	904.13	0.27	1		
Sta 105+89.96 - 62.51' Lt	903.90	904.00	0.10	1		
9	904.44	904.43	-0.01		1	
Sta 106+92.77 - 75.98' Rt	904.40	904.85	0.45		1	
10	905.35	905.42	0.07		1	
12	905.61	905.33	-0.28		1	
13	905.68	905.76	0.08		1	
Sta 110+16.73 - 75.78' Rt	905.12	905.22	0.10	1		
Sta 113+13.29 - 78.19' Lt	904.82	904.72	-0.10			1
(PR39TH) 14	903.94	904.53	0.59			1
(PR39TH) 15	903.59	904.21	0.62			1
(PR39TH) Sta 3910+39.44 - 36.75 Lt	903.95	905.18	1.23			1
(PR39TH) Sta 3910+70.06 - 36.39' Lt	904.08	905.01	0.93			1
17	902.67	904.05	1.38			1
Sta 143+68.40 - 48.96' Lt	903.95	904.81	0.86			1
Sta 144+18.94 - 18.70' Lt	903.55	904.42	0.87			1
Sta 145+76.26 - 22.71' Lt	903.22	903.77	0.55			1
Sta 148+04.29 - 21.51' Lt	903.86	904.59	0.73			1
Sta 149+09.07 - 0.25' Lt	904.43	905.74	1.31			1
19	902.87	903.49	0.62			1
Sta 151+48.37 - 34.97' Lt	902.94	902.79	-0.15	1		
Sta 151+99.47 - 20.43' Lt	903.46	903.33	-0.13		1	
Sta 152+29.50 - 63.62' Rt	904.10	904.44	0.34		1	
Sta 152+32.82 - 1.98' Rt	902.94	903.50	0.56			1
Sta 152+51.41 - 34.64' Rt	903.13	902.78	-0.35	1		
Sta 152+53.21 - 33.26' Lt	903.04	902.80	-0.24	1		
Total				8	10	15

NOTES:

1. Inlet and Manhole Adjustment Summary shows the approximate adjustment heights required. Field verify the actual adjustment height prior to submitting work drawings. Include the costs for removal, disposal, materials, equipment and labor in the price bid for "Adjust Inlet", "Adjust Manhole" & "Adjust Manhole Special".

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INLET AND MANHOLE SUMMARY

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	50	2

Inlet No.	1	
Type	Inlet - Existing	
Grate Style	Existing Inplace	
Sta.	93+22.43 -	48 Lt
Existing Casting Elev.	903.75	
New Casting Elev.	903.61	
Invert NE:	899.46	12 IN PVC
Invert SE:	899.18	18 IN RCP (Exst)

Manhole No.	2	
Type	Manhole - 48IN	
Grate Style	Type 2 (Floating)	
Sta.	99+06.26 -	55.46' Lt
Grate Elev.	902.70	
Base Elev.	897.08	
"H" Dist.	4.16 ft	
Invert E:	897.33	18 IN RCP (Exst)
Invert SW:	897.55	18 IN RCP

Manhole No.	3	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	100+23.14 -	60.81 Lt
Existing Casting Elev.	903.42	
New Casting Elev.	903.22	
Invert N:	887.42	48 IN RCP (Exst)
Invert S:	887.38	48 IN RCP (Exst)
Invert SE:	897.92	18 IN RCP
Invert W:	897.26	18 IN RCP (Exst)

Manhole No.	4	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	100+28.91 -	60.1' Rt
Existing Casting Elev.	903.15	
New Casting Elev.	903.45	
Invert W:	895.38 ft	36 IN RCP (Exst)
Invert SE:	895.48	36 IN RCP (Exst)
Invert SE:	897.70	14 IN FM (Exst)
Invert E:	897.88	15 IN RCP

Manhole No.	5	
Type	Manhole Special	
Grate Style	Type 1 (Standard)	
Sta.	100+33.86 -	108.67' Rt
Grate Elev.	903.80	
Invert NW:	898.41	15 IN RCP
Invert N/S:	887.37	54 IN RCP (Exst)

Inlet No.	1A	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	93+27.49 -	79.87' Lt
Grate Elev.	903.60	
Base Elev.	899.53	
"H" Dist.	3.57 ft	
Invert SW:	899.78	12 IN PVC

Inlet No.	2A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	98+82.78 -	50.64' Lt
Grate Elev.	902.38	
Base Elev.	897.50	
"H" Dist.	4.05 ft	
Invert E:	897.75	18 IN RCP
Invert N:	897.85	15 IN RCP

Inlet No.	3A	
Type	Inlet - Type 2	
Grate Style	V - Intermediate	
Sta.	100+34.17 -	57.22' Lt
Grate Elev.	902.74	
Base Elev.	897.79	
"H" Dist.	4.12 ft	
Invert NW:	898.04	18 IN RCP
Invert SE:	898.14	18 IN RCP

Inlet No.	4A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	100+82.52 -	58.5' Rt
Grate Elev.	903.09	
Base Elev.	898.26	
"H" Dist.	4.00 ft	
Invert W:	898.51	15 IN RCP

Inlet No.	5A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	100+17.75 -	97.20' Rt
Grate Elev.	903.19	
Base Elev.	898.36	
"H" Dist.	4.00 ft	
Invert SE:	898.61	15 IN RCP

Inlet No.	2B	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	98+79.47 -	76.86' Lt
Grate Elev.	901.80	
Base Elev.	897.81	
"H" Dist.	3.49 ft	
Invert S:	898.06	15 IN RCP
Invert W:	898.16	15 IN RCP

Inlet No.	3B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	100+60.56 -	49.50' Lt
Grate Elev.	902.85	
Base Elev.	898.16	
"H" Dist.	3.86 ft	
Invert NW:	898.41	18 IN RCP

Inlet No.	2C	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	97+71.62 -	67.99' Lt
Grate Elev.	902.20	
Base Elev.	898.77	
"H" Dist.	2.93 ft	
Invert E:	899.02	15 IN RCP

NOTES:

1. Type 1 (Standard) Manhole Castings shall be Neenah R-1733, EJ1205Z, or approved equal with a vented lid with the word "STORM" (or the words "STORM SEWER") cast into the center of the lid in letters at least 1 inch high.
2. Type 2 (Floating) Manhole Castings - Refer to Section 20 Detail.
3. Chains used for stationing are "PR32ND" & PR39TH".

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INLET AND MANHOLE SUMMARY

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	50	3

Manhole No.	6	
Type	Manhole - Existing	
Grate Style	Existing Inplace	
Sta.	98+91.40 -	59.47' Rt
Existing Casting Elev.	902.78	
New Casting Elev.	902.68	
Invert W:	893.42	36 IN RCP (Exst)
Invert E:	893.42	36 IN RCP (Exst)
Invert SW:	897.88	18 IN RCP

Manhole No.	7	
Type	Manhole - Existing	
Grate Style	Existing	
Sta.	104+57.93 -	76.5' Rt
Existing Casting Elev.	904.64	
New Casting Elev.	904.85	
Invert E:	894.84	24 IN RCP
Invert N:	898.84	15 IN RCP

Manhole No.	8	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	105+57.50 -	45.58 Lt
Existing Casting Elev.	904.38	
New Casting Elev.	903.56	
Invert N/S:	896.89	24 IN RCP (Exst)
Invert W:	897.38	18 IN RCP
Invert SE:	897.43	18 IN RCP

Manhole No.	9	
Type	Manhole - Existing	
Grate Style	Existing	
Sta.	105+56.71 -	76.20 Rt
Existing Casting Elev.	904.44	
New Casting Elev.	904.43	
Invert NE:	897.74	15 IN RCP
Invert N:	896.24	24 IN RCP
Invert W:	894.49	24 IN RCP
Invert E:	894.44	24 IN RCP

Manhole No.	10	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	113+26.69 -	75.36 Rt
Existing Casting Elev.	905.35	
New Casting Elev.	905.42	
Invert NW:	899.35	18 IN RCP
Invert W:	893.11	24 IN RCP (Exst)
Invert E:	893.25	33 IN RCP
Invert S:	893.01	36 IN RCP (Exst)

Inlet No.	6A	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	98+82.31 -	80.28' Rt
Grate Elev.	902.98	
Base Elev.	897.86	
"H" Dist.	4.62 ft	
Invert NE:	898.11	18 IN RCP

Inlet No.	7A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	104+64.00 -	58.5' Rt
Grate Elev.	903.73	
Base Elev.	898.90	
"H" Dist.	4.00 ft	
Invert SW:	899.15	15 IN RCP

Inlet No.	8A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	104+65.20 -	45.66' Lt
Grate Elev.	903.69	
Base Elev.	898.05	
"H" Dist.	4.81 ft	
Invert E:	898.30	18 IN RCP
Invert N:	898.35	15 IN RCP (Exst)

Inlet No.	9A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	105+56.78 -	59.45' Rt
Grate Elev.	903.41	
Base Elev.	896.08	
"H" Dist.	6.50 ft	
Invert N/S:	896.33	24 IN RCP

Inlet No.	10A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Intermediate	
Sta.	112+66.61 -	67' Rt
Grate Elev.	905.25	
Base Elev.	899.71	
"H" Dist.	4.71 ft	
Invert SE:	899.96	18 IN RCP

Inlet No.	8B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	105+77.87 -	42.84' Lt
Grate Elev.	903.24	
Base Elev.	897.39	
"H" Dist.	5.02 ft	
Invert NW:	897.64	18 IN RCP
Invert NE:	898.47	15 IN RCP (Exst)

NOTES:

1. Type 1 (Standard) Manhole Castings shall be Neenah R-1733, EJ1205Z, or approved equal with a vented lid with the word "STORM" (or the words "STORM SEWER") cast into the center of the lid in letters at least 1 inch high.
2. Type 2 (Floating) Manhole Castings - Refer to Section 20 Detail.
3. Chains used for stationing are "PR32ND" & PR39TH".

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INLET AND MANHOLE SUMMARY

	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	50	4

Manhole No.	11	
Type	Manhole - 60IN	
Grate Style	Type 1 (Standard)	
Sta.	113+27.42 -	69.02' Lt
Grate Elev.	905.91	
Base Elev.	896.22	
Riser Distance:	8.61 ft	
Invert E:	896.47	18 IN RCP
Invert NW:	899.34	12 IN RCP (Exst)
Invert SW:	896.57	18 IN RCP

Manhole No.	11A	
Type	Manhole - 48IN	
Grate Style	Type 1 (Standard)	
Sta.	112+84.64 -	53.94' Lt
Grate Elev.	905.75	
Base Elev.	896.79	
"H" Dist.	7.88 ft	
Invert NE:	897.04	18 IN RCP
Invert S:	898.26	18 IN RCP
Invert SW:	897.14	15 IN RCP

Inlet No.	11B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	112+84.64 -	37.5' Lt
Grate Elev.	905.28	
Base Elev.	898.45	
"H" Dist.	6.00 ft	
Invert N:	898.70	18 IN RCP

Manhole No.	11C	
Type	Manhole - 48IN	
Grate Style	Type 1 (Standard)	
Sta.	111+74.78 -	41.50' Lt
Grate Elev.	906.32	
Base Elev.	897.67	
"H" Dist.	7.57 ft	
Invert NE:	897.92	15 IN RCP
Invert W:	898.05	15 IN RCP
Invert N:	899.56	15 IN RCP

Inlet No.	11D	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	111+74.78 -	67.99' Lt
Grate Elev.	904.28	
Base Elev.	899.57	
"H" Dist.	4.21 ft	
Invert S:	899.82	15 IN RCP

Manhole No.	11E	
Type	Manhole - 48IN	
Grate Style	Type 1 (Standard)	
Sta.	110+21.06 -	41.50' Lt
Grate Elev.	906.42	
Base Elev.	899.50	
"H" Dist.	5.84 ft	
Invert E:	899.75	15 IN RCP
Invert N:	899.85	15 IN RCP

Manhole No.	12	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	113+85.67 -	64.84 Lt
Existing Casting Elev.	905.61	
New Casting Elev.	905.33	
Invert W:	895.85	18 IN RCP
Invert SW: Abandoned	896.91	12 IN RCP (Exst)
Invert E:	898.25	18 IN RCP
Invert N/S:	893.71	33 IN RCP (Exst)

Inlet No.	12A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Intermediate	
Sta.	113+99.44 -	64.09' Lt
Grate Elev.	905.26	
Base Elev.	898.43	
"H" Dist.	6.00 ft	
Invert W:	898.68	18 IN RCP
Invert NE:	899.23	18 IN RCP

Inlet No.	12B	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	114+30.95 -	81.97' Lt
Grate Elev.	902.70	
Base Elev.	899.32	
"H" Dist.	2.88 ft	
Invert SW:	899.57	18 IN RCP

Inlet No.	11F	
Type	Inlet	
Grate Style	Stool Grate	
Sta.	110+21.06 -	72.99' Lt
Grate Elev.	903.50	
Base Elev.	899.95	
"H" Dist.	3.05 ft	
Invert S:	900.20	15 IN RCP

Manhole No.	13	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	113+78.15 -	76.84 Rt
Existing Casting Elev.	905.68	
New Casting Elev.	905.76	
Invert N:	893.42	33 IN RCP (Exst)
Invert W:	893.42	33 IN RCP
New Invert E:	893.62	15 IN RCP

Manhole No.	13A	
Type	Manhole - 48IN	
Cover Style:	Type 2 (Floating)	
Sta.	114+35.28 -	74.63' Rt
Grate Elev.	906.00	
Base Elev.	893.83	
Riser Distance:	10.71 ft	
Invert W:	894.08	15 IN RCP
Invert SE:	894.18	15 IN RCP
Invert N:	899.79	15 IN RCP

Inlet No.	13B	
Type	Inlet Special - Type 2 48IN	
Grate Style	V - Intermediate	
Sta.	114+79.94 -	88.25' Rt
Grate Elev.	905.90	
Base Elev.	894.31	
"H" Dist.	10.26 ft	
Invert NW:	894.56	15 IN RCP
Invert E:	894.64	15 IN RCP
Invert SW:	901.18	15 IN RCP

Inlet No.	13C	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	114+29.69 -	25.50' Rt
Grate Elev.	906.77	
Base Elev.	900.18	
"H" Dist.	5.76 ft	
Invert S:	900.43	15 IN RCP

Inlet No.	13D	
Type	Inlet - Type 2	
Grate Style	V - Intermediate	
Sta.	114+72.14 -	90.15' Rt
Grate Elev.	905.84	
Base Elev.	901.01	
"H" Dist.	4.00 ft	
Invert NE:	901.26	15 IN RCP

39th St S

Inlet No.	14	
Type	Manhole - Existing	
Grate Style	Type 1 (Standard)	
Sta.	3908+28.24 -	36.44' Lt
Existing Grate Elev.	903.94	
New Grate Elev.	904.53	
Invert N:	893.29	36 IN RCP (Exst)
Invert S:	893.14	36 IN RCP (Exst)
Invert E:	897.94	18 IN RCP (Exst)
Invert W:	899.54	12 IN RCP

Inlet No.	14A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	3908+28.93 -	48.51' Lt
Grate Elev.	904.22	
Base Elev.	899.39	
"H" Dist.	4.00 ft	
Invert E:	899.64	15 IN RCP

Inlet No.	14B	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	3908+27.37 -	28' Lt
Grate Elev.	903.64	
Base Elev.	898.00	
"H" Dist.	4.81 ft	
Invert W:	898.25	18 IN RCP
Invert E:	898.45	18 IN RCP

Inlet No.	14C	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	3908+27.37 -	40.00' Rt
Grate Elev.	903.72	
Base Elev.	898.48	
"H" Dist.	4.41 ft	
Invert W:	898.73	18 IN RCP
Invert E:	898.93	12 IN RCP (Exst)

39th St S

Inlet No.	15	
Type	Manhole - Existing	
Grate Style	Type 1 (Standard)	
Sta.	3909+14.70 -	35.54' Lt
Existing Grate Elev.	903.59	
New Grate Elev.	904.21	
Invert N:	893.89	36 IN RCP (Exst)
Invert S:	893.49	36 IN RCP (Exst)
Invert NW:	898.00	15 IN RCP
Invert E:	898.77	18 IN RCP

Inlet No.	15A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	3909+25.25 -	48.63' Lt
Grate Elev.	903.80	
Base Elev.	897.97	
"H" Dist.	5.00 ft	
Invert SE:	898.22	15 IN RCP

Inlet No.	15B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Intermediate	
Sta.	3909+14.70 -	40.00' Rt
Grate Elev.	904.03	
Base Elev.	899.20	
"H" Dist.	4.00 ft	
Invert W:	899.45	18 IN RCP

NOTES:

1. Type 1 (Standard) Manhole Castings shall be Neenah R-1733, EJ1205Z, or approved equal with a vented lid with the word "STORM" (or the words "STORM SEWER") cast into the center of the lid in letters at least 1 inch high.
2. Type 2 (Floating) Manhole Castings - Refer to Section 20 Detail.
3. Chains used for stationing are "PR32ND" & PR39TH".

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INLET AND MANHOLE SUMMARY

STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	50	5

Manhole No.	16	
Type	Manhole - 60IN	
Grate Style	Type 1 (Standard)	
Sta.	141+75.46 -	5.5' Rt
Grate Elev.	904.73	
Base Elev.	897.29	
"H" Dist.	6.36 ft	
Invert E:	897.54	21 IN RCP
Invert N:	898.14	18 IN RCP
Invert S:	898.31	18 IN RCP

Inlet No.	16A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	141+75.46 -	48.09' Lt
Grate Elev.	903.25	
Base Elev.	898.42	
"H" Dist.	4.00 ft	
Invert S:	898.67	18 IN RCP
Invert E:	898.77	18 IN RCP

Inlet No.	16B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	141+75.46 -	46' Rt
Grate Elev.	903.29	
Base Elev.	898.46	
"H" Dist.	4.00 ft	
Invert N:	898.71	18 IN RCP
Invert E:	898.81	18 IN RCP

Inlet No.	16C	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	141+85.62 -	47.09' Lt
Grate Elev.	903.28	
Base Elev.	898.62	
"H" Dist.	3.83 ft	
Invert W:	898.87	18 IN RCP

Inlet No.	16D	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	141+85.41 -	46.00' Rt
Grate Elev.	903.29	
Base Elev.	898.66	
"H" Dist.	3.80 ft	
Invert W:	898.91	18 IN RCP

Manhole No.	17	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	145+40.64 -	0.75 Rt
Existing Casting Elev.	902.67	
New Casting Elev.	904.05	
Invert NW/SW:	897.96	18 IN RCP
Invert W:	895.71	21 IN RCP
Invert E:	889.88	42 IN RCP (Exst)
Invert N/S:	889.88	30 IN RCP (Exst)

Inlet No.	17A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	145+21.96 -	44' Lt
Grate Elev.	903.02	
Base Elev.	898.19	
"H" Dist.	4.00 ft	
Invert SE:	898.44	18 IN RCP

Inlet No.	17B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	145+23.87 -	44' Rt
Grate Elev.	903.02	
Base Elev.	898.19	
"H" Dist.	4.00 ft	
Invert NE:	898.44	18 IN RCP

Manhole No.	18	
Type	Manhole - Special	
Grate Style	Type 2 (Floating)	
Sta.	146+01.98 -	0.59' Rt
Grate Elev.	904.22	
Invert W/E:	889.33	42 IN RCP
Invert NE:	897.90	18 IN RCP
Invert SE:	897.97	18 IN RCP

Inlet No.	18A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	146+30.93 -	44' Rt
Grate Elev.	903.26	
Base Elev.	898.19	
"H" Dist.	4.24 ft	
Invert NW:	898.44	18 IN RCP
Invert SW:	898.54	12 IN PVC

Inlet No.	18B	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	146+30.93 -	44.00' Lt
Grate Elev.	903.26	
Base Elev.	898.72	
"H" Dist.	3.71 ft	
Invert SW:	898.97	18 IN RCP
Invert NE:	899.02	12 IN PVC

Inlet No.	18C	
Type	Inlet Special - Type 2 48IN	
Grate Style	VB - Low Point	
Sta.	146+43.70 -	63.88' Lt
Grate Elev.	902.99	
Base Elev.	898.66	
"H" Dist.	3.00 ft	
Invert SW:	899.25	12 IN PVC
Invert NW:	899.30	12 IN PVC

Inlet No.	18D	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	146+25.48 -	84.32' Lt
Grate Elev.	903.13	
Base Elev.	899.30	
"H" Dist.	3.00 ft	
Invert SE:	899.54	12 IN PVC

Manhole No.	18E	
Type	Manhole - 48IN	
Grate Style	Type 1 (Standard)	
Sta.	146+04.91 -	68.07' Rt
Grate Elev.	904.14	
Base Elev.	898.53	
"H" Dist.	4.53 ft	
Invert NE:	898.78	12 IN PVC
Invert SE:	899.10	8 IN PVC (Exst)

Inlet No.	19	
Type	Manhole - Existing	
Grate Style	Type 2 (Floating)	
Sta.	151+65.85 -	2.62 Lt
Existing Casting Elev.	902.87	
New Casting Elev.	903.49	
Invert SW:	898.51	18 IN RCP
Invert NW/E:	898.47	15 IN RCP (Exst)

Inlet No.	19A	
Type	Inlet - Type 2 DBL	
Grate Style	V - Low Point	
Sta.	151+50.00 -	44' Rt
Grate Elev.	902.56	
Base Elev.	898.73	
"H" Dist.	3.00 ft	
Invert NE:	898.98	18 IN RCP

Manhole No.	20	
Type	Manhole Special	
Grate Style	Type 2 (Floating)	
Sta.	154+29.62 -	1.47' Rt
Grate Elev.	903.63	
Invert E/W:	889.17	48 IN RCP (Exst)
Invert S:	896.91	15 IN RCP
Invert SE:	898.7	15 IN RCP

Inlet No.	20A	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	154+29.64 -	8.5' Rt
Grate Elev.	903.59	
Base Elev.	896.76	
"H" Dist.	6.00 ft	
Invert N:	897.01	15 IN RCP

Inlet No.	20B	
Type	Inlet - Type 2	
Grate Style	VB - Low Point	
Sta.	154+43.14 -	4.5' Rt
Grate Elev.	903.42	
Base Elev.	898.59	
"H" Dist.	4.00 ft	
Invert NW:	898.84	15 IN RCP

NOTES:

1. Type 1 (Standard) Manhole Castings shall be Neenah R-1733, EJ1205Z, or approved equal with a vented lid with the word "STORM" (or the words "STORM SEWER") cast into the center of the lid in letters at least 1 inch high.
2. Type 2 (Floating) Manhole Castings - Refer to Section 20 Detail.
3. Chains used for stationing are "PR32ND" & PR39TH".

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INLET AND MANHOLE SUMMARY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	50	6

Inlet No. 51A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 115+77.7 - 37.5' Lt. (PR32ND)
Grate Elev. 907.10
Base Elev. 902.77
Invert Elev. 904.10
H' Dist. 4.00 Ft.

Manhole No. 52 - 72 In.
Sta. 116+17.4 - 86.9' Rt. (PR32ND)
Top Elev. 907.22
Base Elev. 895.76
Invert Elev. 895.95
Riser 9.79 Ft.

15 In. Conduit W	895.95
15 In. Conduit N	903.10
15 In. Conduit E	896.00

Inlet No. 52A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 116+17.4 - 81' Rt. (PR32ND)
Grate Elev. 907.35
Base Elev. 903.02
Invert Elev. 903.21
H' Dist. 4.00 Ft.

Inlet No. 53A
Type Inlet - Special - Type 2 - 72 In. w/10 LF Slotted Drain
Grate Style V
Sta. 118+40 - 88.4' Rt. (PR32ND)
Grate Elev. 911.18
Base Elev. 897.86
Invert Elev. 898.11
H' Dist. 12.32 Ft.

15 In. Conduit W	898.11
24 In. Conduit S	899.27
24 In. Conduit N	898.11

Manhole No. 54 - 60 In. (Adjust Existing)
Sta. 118+41.1 - 52.6' Lt. (PR32ND)
Top Elev. 910.64
Base Elev. 900.04
Invert Elev. 900.29
Riser 8.93 Ft.

24 In. Conduit S	900.29
6 In. Conduit NW	908.39
6 In. Conduit NW	908.39

Manhole No. 55 - 84 In.
Sta. 118+84.1 - 59' Lt. (PR32ND)
Top Elev. 913.50
Base Elev. 899.97
Invert Elev. 900.30
Riser 11.86 Ft.

36 In. Conduit S	900.30
15 In. Conduit S	906.70
30 In. Conduit NW	900.30
36 In. Conduit N	900.30

Inlet No. 55A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 118+84 - 49.6' Lt. (PR32ND)
Grate Elev. 912.96
Base Elev. 906.63
Invert Elev. 906.82
H' Dist. 6.00 Ft.

Inlet No. 55B
Type Inlet - Type 2
Grate Style V
Sta. 117+67.6 - 61.6' Lt. (PR32ND)
Grate Elev. 909.85
Base Elev. 905.52
Invert Elev. 907.10
H' Dist. 4.00 Ft.

Inlet No. 56A
Type Inlet - Type 2
Grate Style V
Sta. 120+23.6 - 40.9' Lt. (PR32ND)
Grate Elev. 916.85
Base Elev. 912.52
Invert Elev. 912.73
H' Dist. 4.00 Ft.

Inlet No. 57A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 120+63.3 - 85' Rt. (PR32ND)
Grate Elev. 917.21
Base Elev. 912.88
Invert Elev. 913.09
H' Dist. 4.00 Ft.

Inlet No. 58A
Type Inlet - Type 2 - Double
Grate Style V
Sta. 122+18.8 - 43.3' Lt. (PR32ND)
Grate Elev. 921.37
Base Elev. 917.04
Invert Elev. 917.25
H' Dist. 4.00 Ft.

18 In. Conduit NE	917.25
15 In. Conduit E	918.75

Inlet No. 58B
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 123+14.8 - 44.5' Lt. (PR32ND)
Grate Elev. 922.86
Base Elev. 918.53
Invert Elev. 918.85
H' Dist. 4.00 Ft.

Inlet No. 59A
Type Inlet - Type 2
Grate Style V
Sta. 21+41.4 - 7.8' Rt. (PR32SWL)
Grate Elev. 922.40
Base Elev. 918.07
Invert Elev. 918.28
H' Dist. 4.00 Ft.

Inlet No. 60A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 2+46.5 - 7.1' Rt. (PR32SEL)
Grate Elev. 924.00
Base Elev. 919.67
Invert Elev. 919.88
H' Dist. 4.00 Ft.

Inlet No. 61A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 4+21.2 - 7.6' Rt. (PR32SEL)
Grate Elev. 919.03
Base Elev. 914.70
Invert Elev. 914.91
H' Dist. 4.00 Ft.

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INLET AND MANHOLE SUMMARY

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	50	7

Inlet No. 62A
Type Inlet - Special - Type 2 - 48 In. w/10 LF Slotted Drain
Grate Style V
Sta. 133+94.6 - 47.2' Lt. (PR32ND)
Grate Elev. 921.42
Base Elev. 916.59
Invert Elev. 916.80
H' Dist. 4.00 Ft.

Inlet No. 63A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 135+46.8 - 59.9' Rt. (PR32ND)
Grate Elev. 917.90
Base Elev. 913.57
Invert Elev. 913.78
H' Dist. 4.00 Ft.

Inlet No. 64A
Type Inlet - Type 2
Grate Style V
Sta. 136+17.3 - 58.5' Lt. (PR32ND)
Grate Elev. 916.11
Base Elev. 911.78
Invert Elev. 911.99
H' Dist. 4.00 Ft.

Inlet No. 65A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 137+18.5 - 59' Rt. (PR32ND)
Grate Elev. 913.52
Base Elev. 909.19
Invert Elev. 909.40
H' Dist. 4.00 Ft.

Inlet No. 66A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 137+19.1 - 59' Lt. (PR32ND)
Grate Elev. 913.35
Base Elev. 909.02
Invert Elev. 909.23
H' Dist. 4.00 Ft.

Inlet No. 67A
Type Inlet - Special - Type 2 - 48 In.
Grate Style V
Sta. 14+03.3 - 37.4' Rt. (EX36N)
Grate Elev. 908.24
Base Elev. 901.52
Invert Elev. 901.73
H' Dist. 5.89 Ft.

Inlet No. 68A
Type Inlet - Type 2 w/10 LF Slotted Drain
Grate Style V
Sta. 15+52.6 - 53.5' Lt. (PR36S_NB)
Grate Elev. 907.76
Base Elev. 903.43
Invert Elev. 903.64
H' Dist. 4.00 Ft.

Inlet No. 69A
Type Inlet - Type 2 - Double
Grate Style DR/DL
Sta. 14+00.7 - 52.5' Lt. (PR36S_NB)
Grate Elev. 906.58
Base Elev. 902.25
Invert Elev. 902.46
H' Dist. 4.00 Ft.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	50	8

HYDRAULIC DATA FOR IM-8-029(166)062 (A)									
				25-YEAR DATA				100-YEAR DATA	
STATION	EXISTING PIPE	PROPOSED PIPE SIZE	DRAINAGE AREA (ACRES)	DESIGN DISCHARGE (CFS)	DESIGN HEADWATER (FT)	DESIGN VELOCITY (FPS)	DESIGN STAGE (NAVD 88)	100-YEAR DISCHARGE (CFS)	100-YEAR STAGE (NAVD 88)
118+82	36" CSP	36"	106.0	24.4	2.54	6.22	902.84	32.2	903.28
137+30	Dbl 36" CSP	Dbl 36"	31.4	14.7	1.29	3.25	901.79	18.9	901.98

(A) Hydraulic data provided is for smooth-walled (Manning's n=0.012) type conduits.

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Culvert Hydraulic Data

32nd Avenue South
Fargo

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	51	1

Reference Chain	Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
					In	Bid Item	LF		In	Type		In	SY	Begin EA	End EA	
PR32ND	51A		115+78	73.5' Lt	18	Pipe Conduit - Storm Drain	33'	Reinforced Concrete Pipe - Class III **(barrel length = 30 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR32ND	115+75	87.4' Rt	52		15	Pipe Conduit - Storm Drain	40'	Reinforced Concrete Pipe - Class III **(barrel length = 40 LF)**	15							D-714-27
PR32ND	52A		52		15	Pipe Conduit - Storm Drain	4'	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	15							
								Spiral Rib Steel Pipe	15	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	15	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
PR32ND	52		53A		15	Pipe Conduit - Storm Drain	218'	Reinforced Concrete Pipe - Class III **(barrel length = 218 LF)**	15							
								Spiral Rib Steel Pipe	15	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	15	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
PR32ND	55B		55A		15	Pipe Conduit - Storm Drain	122'	Reinforced Concrete Pipe - Class III **(barrel length = 122 LF)**	15							
								Spiral Rib Steel Pipe	15	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	15	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
PR32ND	54		118+41	11.0' Lt	24	Pipe Conduit - Storm Drain	40'	Spiral Rib Steel Pipe	24	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	24	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
PR32ND	118+41	11.0' Lt	53A		24	Pipe Conduit - Storm Drain	97'	Spiral Rib Steel Pipe	24	Z	3/4, 1	0.168				
								Spiral Rib Steel Pipe	24	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
PR32ND	53A		118+37	137.2' Rt	24	Pipe Conduit - Storm Drain	43'	Reinforced Concrete Pipe - Class III **(barrel length = 40 LF)**	24							
								Spiral Rib Steel Pipe	24	Z	3/4, 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	24	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
PR32ND	118+40	98.3' Lt	55		30	Pipe Conduit - Storm Drain	55'	Reinforced Concrete Pipe - Class III **(barrel length = 54 LF)**	30							
								Spiral Rib Steel Pipe	30	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	30	A	3/4, 1	0.138		FES (4:1)		
								Spiral Rib Steel Pipe	30	P	3/4, 1	0.064				
PR32ND	119+15	127.3' Lt	55		36	Pipe Conduit - Storm Drain	67'	Reinforced Concrete Pipe - Class III **(barrel length = 64 LF)**	36							
								Spiral Rib Steel Pipe	36	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	36	A	3/4, 1	0.138		FES (4:1)		
								Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
PR32ND	55A		55		15	Pipe Conduit - Storm Drain	6'	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	15							
								Spiral Rib Steel Pipe	15	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	15	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
PR32ND	55		118+82	99.7' Rt	36	Pipe Conduit - Jack or Bore 36IN	156'	Reinforced Concrete Pipe - Class III **(barrel length = 156 LF)**	36							Standard D-714-16
								Smooth Walled Steel	36			0.469				
PR32ND	118+82	99.7' Rt	118+82	141.8' Rt	36	Pipe Conduit - Storm Drain	37'	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	36							
								Spiral Rib Steel Pipe	36	Z	3/4, 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	36	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				

Note: Stations and offsets shown on this sheet are listed to the flared end of the end section.

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

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. For Pipe Extensions, end sections will be paid for seperately.

FES = Flared End Section

TES = Traversable End Section

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Allowable Pipe List

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	51	2

Reference Chain	Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
					In	Bid Item	LF		In	Type		In	SY	Begin EA	End EA	
PR32ND	56A		120+48	111.9' Lt	18	Pipe Conduit - Storm Drain	72'	Reinforced Concrete Pipe - Class III **(barrel length = 68 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	57A		120+65	137.1' Rt	18	Pipe Conduit - Storm Drain	49'	Reinforced Concrete Pipe - Class III **(barrel length = 46 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	58A		123+31	139.4' Lt	18	Pipe Conduit - Storm Drain	145'	Reinforced Concrete Pipe - Class III **(barrel length = 142 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	58A		58B		15	Pipe Conduit - Storm Drain	92'	Reinforced Concrete Pipe - Class III **(barrel length = 92 LF)**	15							
								Spiral Rib Steel Pipe	15	Z	3/4. 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	15	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	15	P	3/4. 1	0.064				
PR32ND	62A		134+53	110.2' Lt	18	Pipe Conduit - Storm Drain	82'	Reinforced Concrete Pipe - Class III **(barrel length = 78 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168	430		FES (4:1)	Standard D-714-26
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	63A		135+47	114.7' Rt	18	Pipe Conduit - Storm Drain	52'	Reinforced Concrete Pipe - Class III **(barrel length = 48 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	135+93	98.5' Lt	64A		18	Pipe Conduit - Storm Drain	45'	Reinforced Concrete Pipe - Class III **(barrel length = 42 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168		FES (4:1)		Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	65A		137+18	118.8' Rt	18	Pipe Conduit - Storm Drain	58'	Reinforced Concrete Pipe - Class III **(barrel length = 54 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	66A		137+17	125.5' Lt	18	Pipe Conduit - Storm Drain	64'	Reinforced Concrete Pipe - Class III **(barrel length = 60 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	18	P	3/4. 1	0.064				
PR32ND	137+25	127.5' Lt	137+25	97.4' Lt	36	Pipe Conduit - Storm Drain	25'	Reinforced Concrete Pipe - Class III **(barrel length = 22 LF)**	36							
								Spiral Rib Steel Pipe	36	Z	3/4. 1	0.168		FES (4:1)		Standard D-714-27
								Spiral Rib Steel Pipe	36	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	36	P	3/4. 1	0.064				
PR32ND	137+25	97.4' Lt	137+25	76.6' Rt	36	Pipe Conduit - Jack or Bore 36IN	174'	Reinforced Concrete Pipe - Class III **(barrel length = 174 LF)**	36							Standard D-714-16
								Smooth Walled Steel	36			0.469				
PR32ND	137+25	76.6' Rt	137+25	120.8' Rt	36	Pipe Conduit - Storm Drain	39'	Reinforced Concrete Pipe - Class III **(barrel length = 36 LF)**	36							
								Spiral Rib Steel Pipe	36	Z	3/4. 1	0.168			FES (4:1)	Standard D-714-27
								Spiral Rib Steel Pipe	36	A	3/4. 1	0.138				
								Spiral Rib Steel Pipe	36	P	3/4. 1	0.064				

Note: Stations and offsets shown on this sheet are listed to the flared end of the end section.

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

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. For Pipe Extensions, end sections will be paid for seperately.

FES = Flared End Section

TES = Traversable End Section

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Allowable Pipe List

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	51	3

Reference Chain	Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
														Begin	End	
					In	Bid Item	LF		In	Type		In	SY	EA	EA	
PR32ND	137+35	127.5' Lt	137+35	97.4' Lt	36	Pipe Conduit - Storm Drain	25'	Reinforced Concrete Pipe - Class III **(barrel length = 22 LF)**	36							
								Spiral Rib Steel Pipe	36	Z	3/4, 1	0.168		FES (4:1)		Standard D-714-27
								Spiral Rib Steel Pipe	36	A	3/4, 1	0.138				
								Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
PR32ND	137+35	97.4' Lt	137+35	76.6' Rt	36	Pipe Conduit - Jack or Bore 36IN	174'	Reinforced Concrete Pipe - Class III **(barrel length = 174 LF)**	36							Standard D-714-16
								Smooth Walled Steel	36			0.469				
PR32ND	137+35	76.6' Rt	137+35	126.8' Rt	36	Pipe Conduit - Storm Drain	45'	Reinforced Concrete Pipe - Class III **(barrel length = 42 LF)**	36							
								Spiral Rib Steel Pipe	36	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	36	A	3/4, 1	0.138			FES (4:1)	
								Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
PR32SWR	10+26	55.0' Lt	10+26	40.0' Rt	24	Pipe Conduit - Storm Drain	88'	Reinforced Concrete Pipe - Class III **(barrel length = 84 LF)**	24							
								Spiral Rib Steel Pipe	24	Z	3/4, 1	0.168				Standard D-714-26
								Spiral Rib Steel Pipe	24	A	3/4, 1	0.138	445	FES (4:1)	FES (4:1)	
								Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
PR32SWL	14+60	32.0' Rt	14+60	52.0' Lt	24	Pipe Conduit - Storm Drain	77'	Reinforced Concrete Pipe - Class III **(barrel length = 72 LF)**	24							
								Spiral Rib Steel Pipe	24	Z	3/4, 1	0.168				Standard D-714-26
								Spiral Rib Steel Pipe	24	A	3/4, 1	0.138	400	FES (4:1)	FES (4:1)	
								Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
PR32SWL	59A		21+12	79.0' Rt	18	Pipe Conduit - Storm Drain	77'	Reinforced Concrete Pipe - Class III **(barrel length = 74 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138			FES (4:1)	
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR32SEL	60A		2+41	89.4' Rt	18	Pipe Conduit - Storm Drain	79'	Reinforced Concrete Pipe - Class III **(barrel length = 76 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138			FES (4:1)	
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR32SEL	4+26	67.9' Rt	61A		18	Pipe Conduit - Storm Drain	57'	Reinforced Concrete Pipe - Class III **(barrel length = 54 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138		FES (4:1)		
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
EX36N	14+13	23.8' Rt	67A		24	Pipe Conc. Reinf. CL III (Extension)	14'	Reinforced Concrete Pipe - Class III **(barrel length = 14 LF)**								Standard D-714-27
EX36N	67A		13+84	77.2' Rt	18	Pipe Conduit - Storm Drain	39'	Reinforced Concrete Pipe - Class III **(barrel length = 36 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138			FES (4:1)	
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR36S-NB	69A		13+97	81.4' Lt	18	Pipe Conduit - Storm Drain	26'	Reinforced Concrete Pipe - Class III **(barrel length = 22 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138			FES (4:1)	
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR36S-NB	68A		15+54	87.4' Lt	18	Pipe Conduit - Storm Drain	31'	Reinforced Concrete Pipe - Class III **(barrel length = 28 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138			FES (4:1)	
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR_TRL	15+25	31.1' Lt	15+60	17.4' Rt	18	Pipe Conduit - Storm Drain	56'	Reinforced Concrete Pipe - Class III **(barrel length = 48 LF)**	18							
								Spiral Rib Steel Pipe	18	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	18	A	3/4, 1	0.138		FES (4:1)	FES (4:1)	
								Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
PR_TRL	18+82	38.9' Rt	19+10	61.1' Lt	24	Pipe Conduit - Storm Drain	97'	Reinforced Concrete Pipe - Class III **(barrel length = 92 LF)**	24							
								Spiral Rib Steel Pipe	24	Z	3/4, 1	0.168				Standard D-714-27
								Spiral Rib Steel Pipe	24	A	3/4, 1	0.138		FES (4:1)	FES (4:1)	
								Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				

Note: Stations and offsets shown on this sheet are listed to the flared end of the end section.

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

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

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

(*) The price bid for "Pipe Conduit" bid items incluces end sections. For Pipe Extensions, end sections will be paid for seperately.

FES = Flared End Section

TES = Traversable End Section

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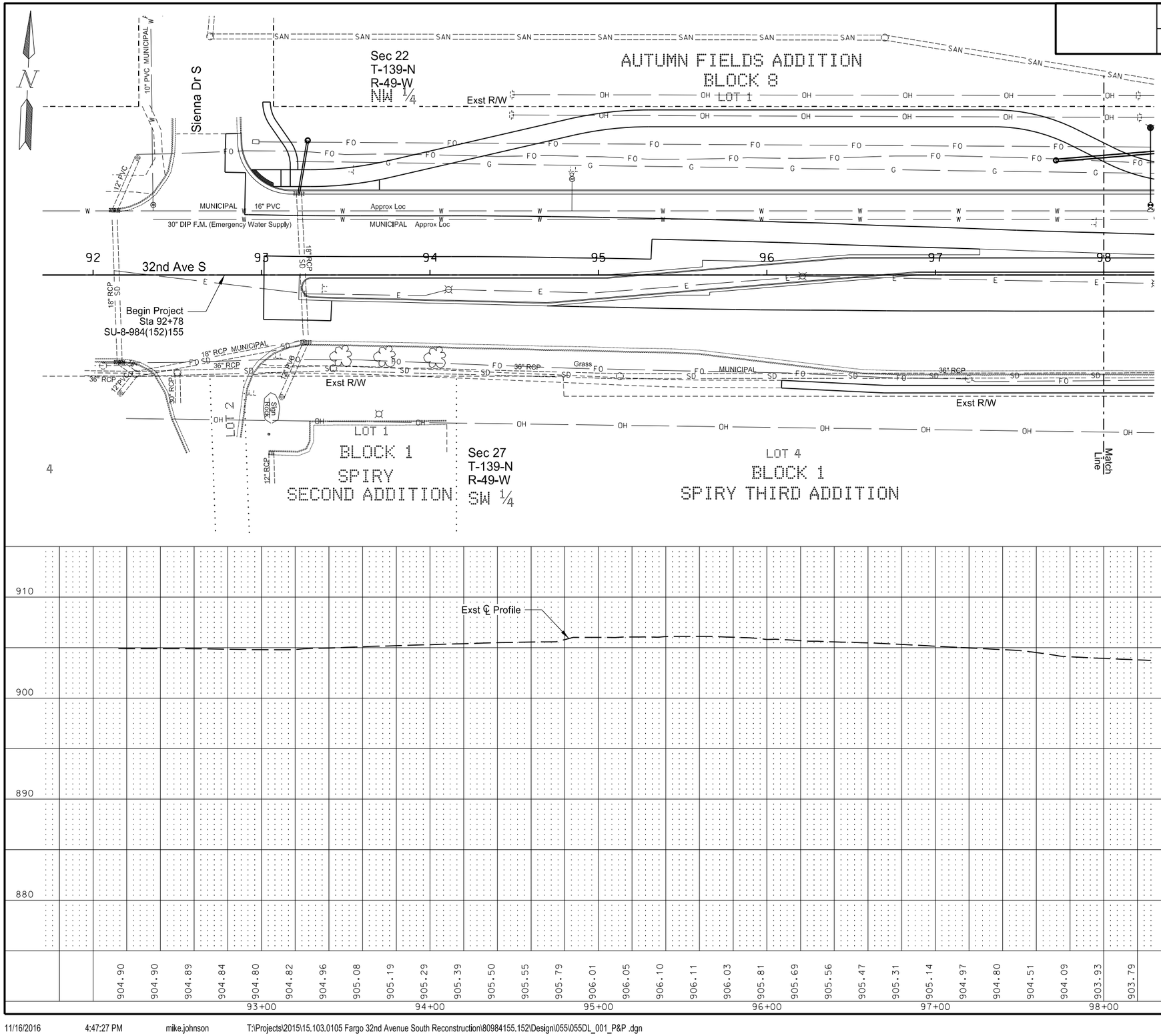
Allowable Pipe List

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	55	1

NOTE: No Sanitary Sewer or Water Main items on this sheet.



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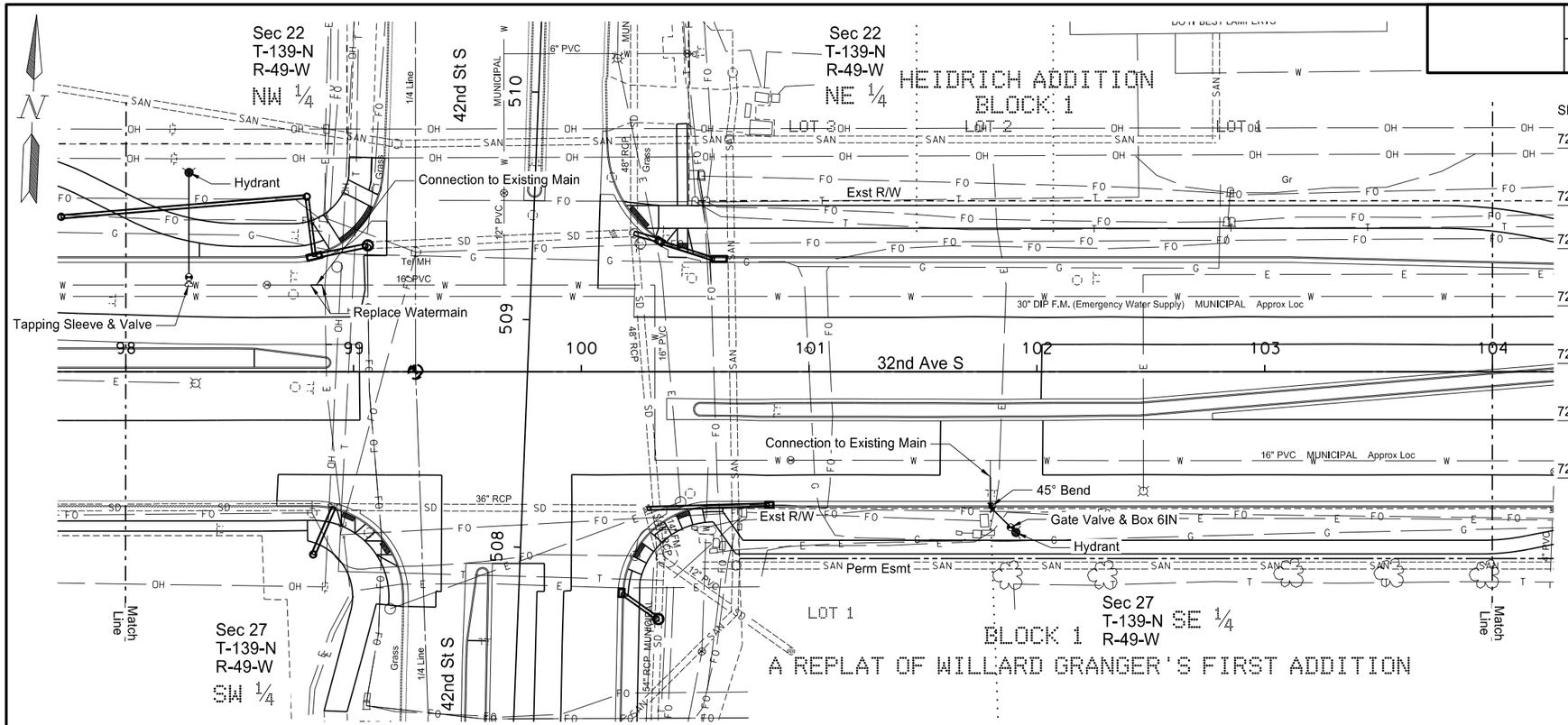
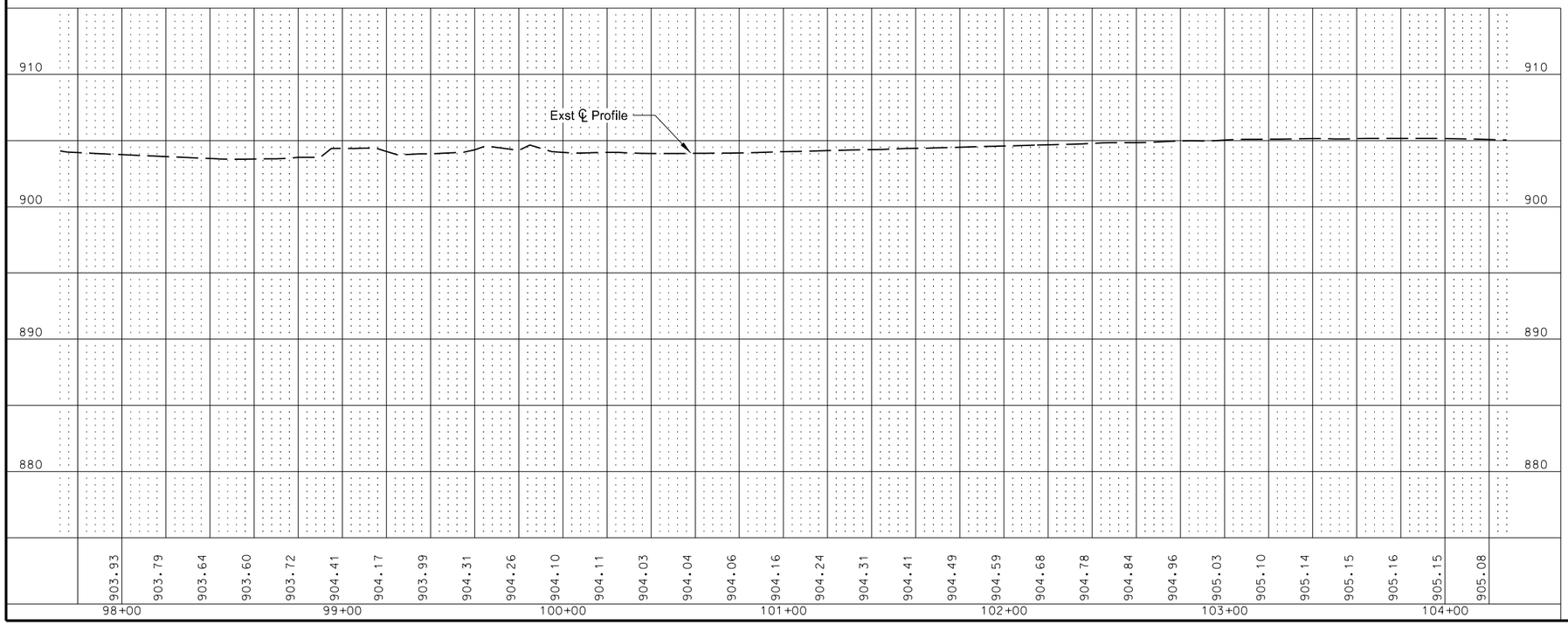
Sanitary Sewer & Water Main Plan & Profile

32nd Ave South

Sta 92+78 to 98+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	2





SPEC	CODE	BID ITEM	QTY	UNIT
724	0210	FITTINGS - DUCTILE IRON		
		Sta 101+79.60 59.43' Rt (45° Bend)	105	LBS
724	0300	GATE VALVE & BOX 6IN		
		Sta 101+88.51 68.36' Rt	1	EA
724	0410	HYDRANT-INSTALL 5IN		
		Sta 98+27.73 87.48' Lt	1	EA
		Sta 101+90.80 70.65' Rt	1	EA
724	0550	TAPPING SLEEVE & VALVE 16IN X 6IN		
		Sta 98+27.72 38.15' Lt	1	EA
724	0810	WATERMAIN 6IN PVC		
		Sta 98+27.72 38.15' Lt to 98+27.73 87.48' Lt	50	LF
		Sta 101+79.60 46.21' Rt to 101+90.80 70.65' Rt	30	LF
724	0852	WATERMAIN 16IN PVC		
		Sta 98+81.17 38.08' Lt to 98+86.17 38.08' Lt	5	LF
724	0944	CONNECTION TO EXISTING MAIN		
		Sta 98+81.17 38.08' Lt & 98+86.17 38.08' Lt	1	EA
		Sta 101+79.60 46.21' Rt	1	EA

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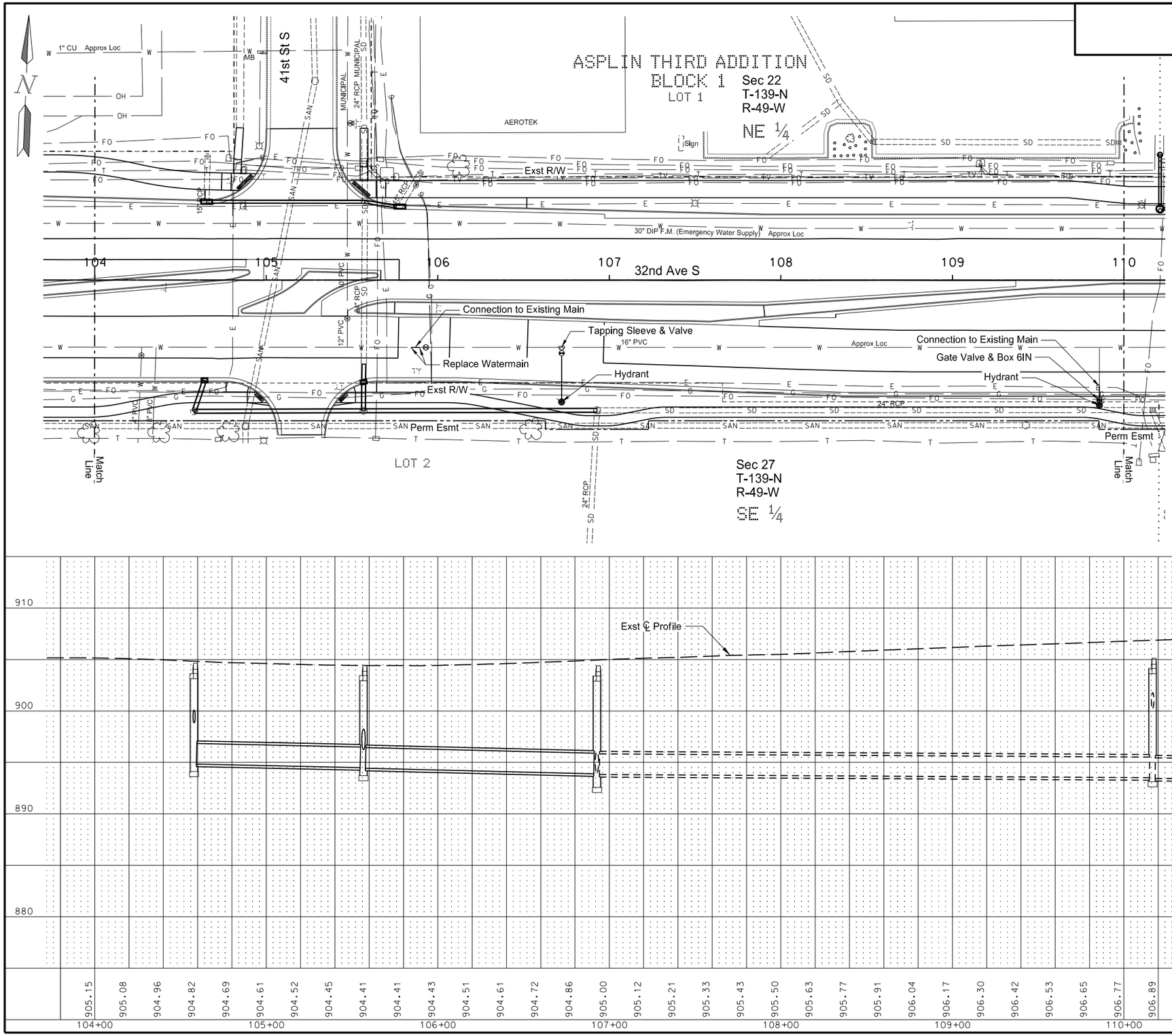
Sanitary Sewer & Water Main Plan & Profile

32nd Ave South

Sta 98+00 to 104+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	3



SPEC CODE	BID ITEM	QTY	UNIT
724 0300	GATE VALVE & BOX 6IN		
	Sta 109+85.71 70.03' Rt	1	EA
724 0410	HYDRANT-INSTALL 5IN		
	Sta 106+72.20 71.08' Rt	1	EA
	Sta 109+85.72 73.00' Rt	1	EA
724 0550	TAPPING SLEEVE & VALVE 16IN X 6IN		
	Sta 106+72.20 39.29' Rt	1	EA
724 0810	WATERMAIN 6IN PVC		
	Sta 106+72.20 39.29' Rt to 106+72.20 71.08' Rt	32	LF
	Sta 109+85.72 61.97' Rt to 109+85.72 73.00' Rt	11	LF
724 0852	WATERMAIN 16IN PVC		
	Sta 105+84.38 39.28' Rt to 105+89.38 39.28' Rt	5	LF
724 0944	CONNECTION TO EXISTING MAIN		
	Sta 105+84.38 39.28' Rt & 105+89.38 39.28' Rt	1	EA
	Sta 109+85.72 61.97' Rt	1	EA

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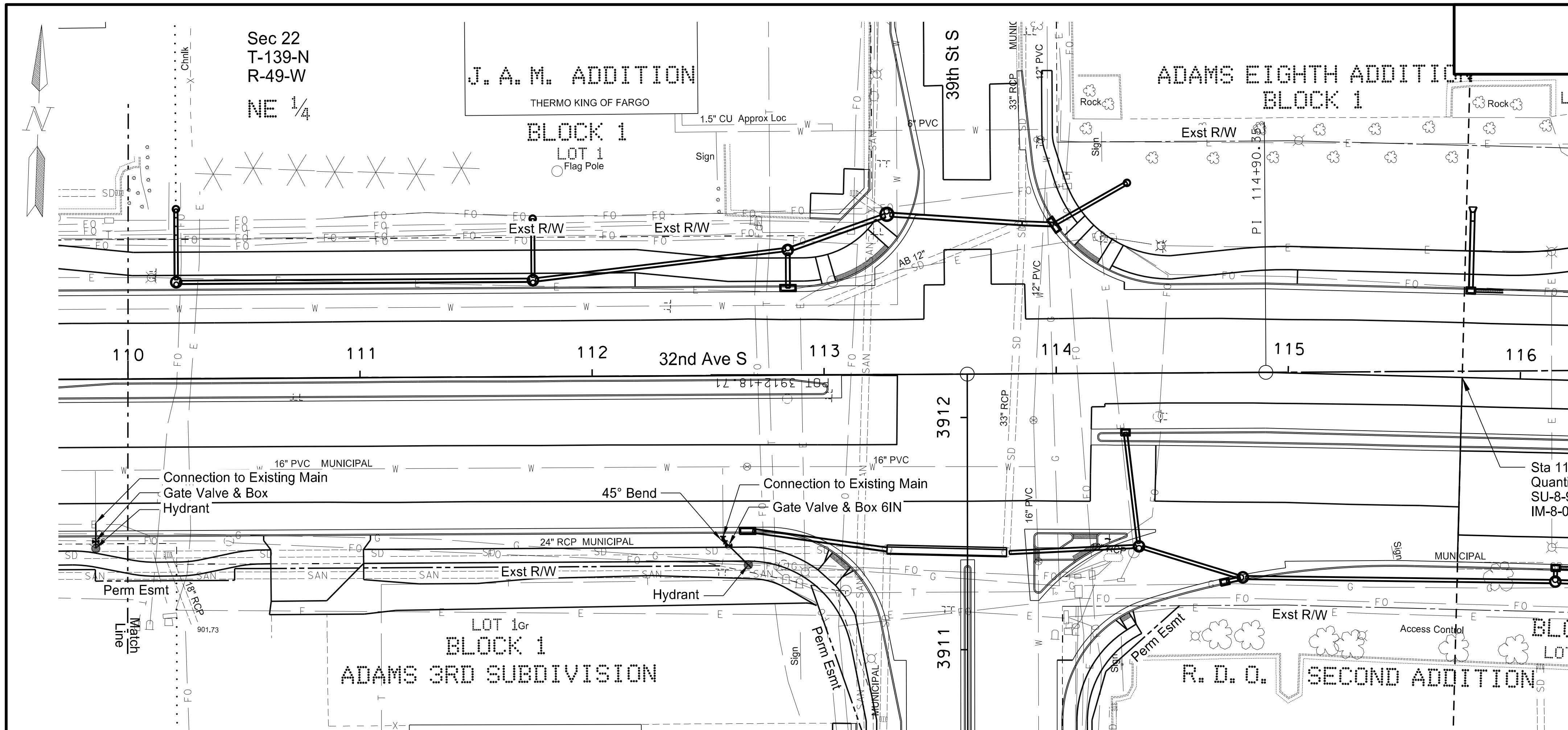
Sanitary Sewer & Water Main Plan & Profile

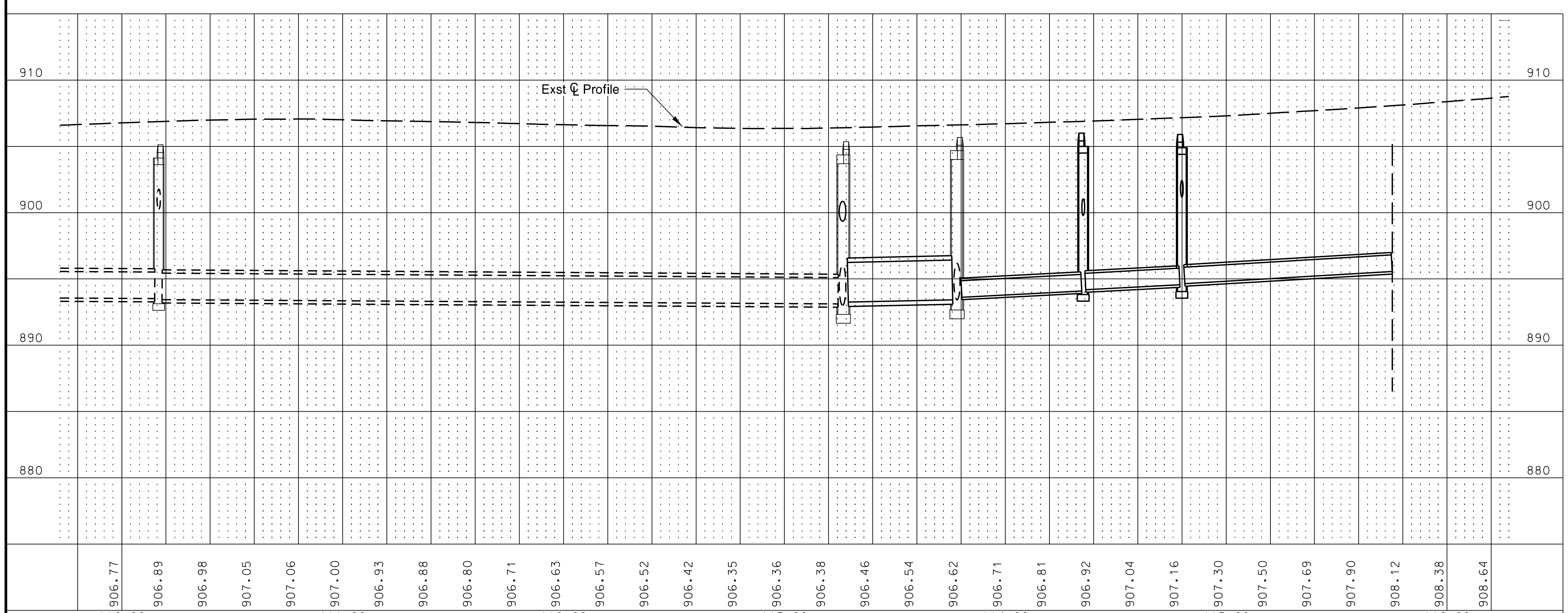
32nd Ave South

Sta 104+00 to 110+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	4



SPEC	CODE	BID ITEM	QTY	UNIT
724	0210	FITTINGS - DUCTILE IRON		
		Sta 112+56.14 Rt 70.84' (45° Bend)	105	LBS
724	0300	GATE VALVE & BOX 6IN		
		Sta 112+58.44 73.25' Rt	1	EA
724	0410	HYDRANT-INSTALL 5IN		
		Sta 112+66.86 81.67' Rt	1	EA
724	0810	WATERMAIN 6IN PVC		
		Sta 112+56.02 70.84' Rt to 112+66.86 81.67' Rt	17	LF
724	0944	CONNECTION TO EXISTING MAIN		
		Sta 112+56.02 69.09' Rt	1	EA



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Sanitary Sewer & Water Main Plan & Profile

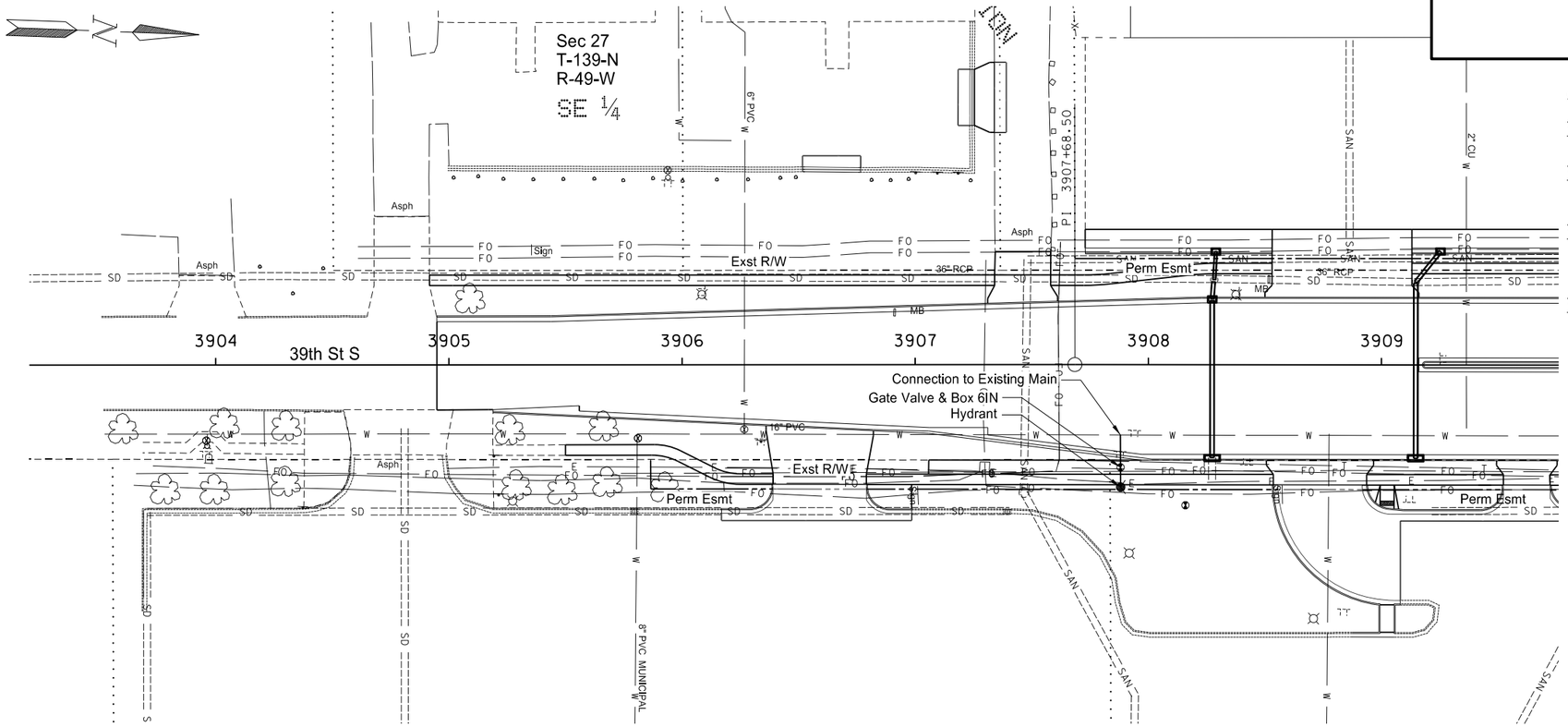
32nd Ave South

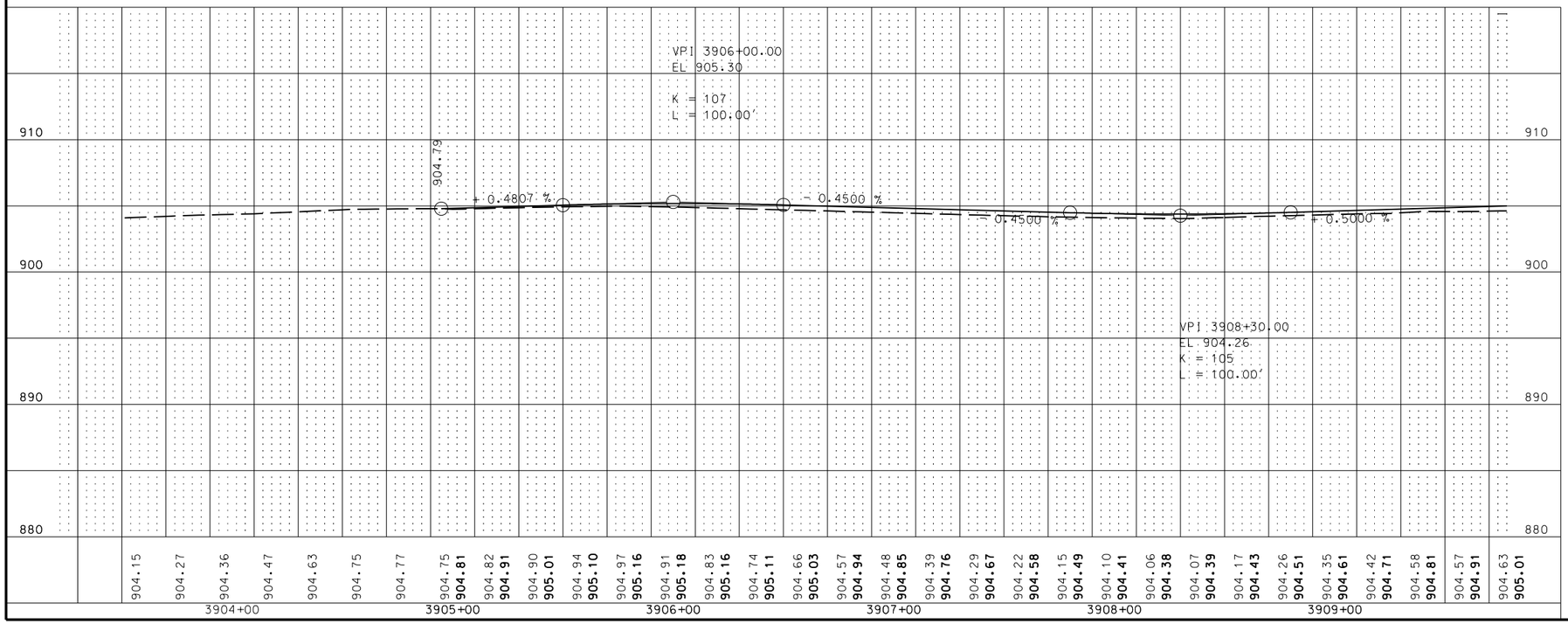
Sta 110+00 to 115+75

11/16/2016 4:47:34 PM mike.johnson T:\Projects\2015\15.103.0105 Fargo 32nd Avenue South Reconstruction\80984155.152\Design\055\055DL_004_P&P.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	5

SPEC CODE		BID ITEM	QTY	UNIT
724	0300	GATE VALVE & BOX 6IN		
		Sta 3907+88.13 44.05' Rt	1	EA
724	0410	HYDRANT-INSTALL 5IN		
		Sta 3907+88.17 52.50' Rt	1	EA
724	0810	WATERMAIN 6IN PVC		
		Sta 3907+88.17 52.50' Rt to 3907+88.08 30.16' Rt	23	LF
724	0944	CONNECTION TO EXISTING MAIN		
		Sta 3907+88.08 30.16' Rt	1	EA





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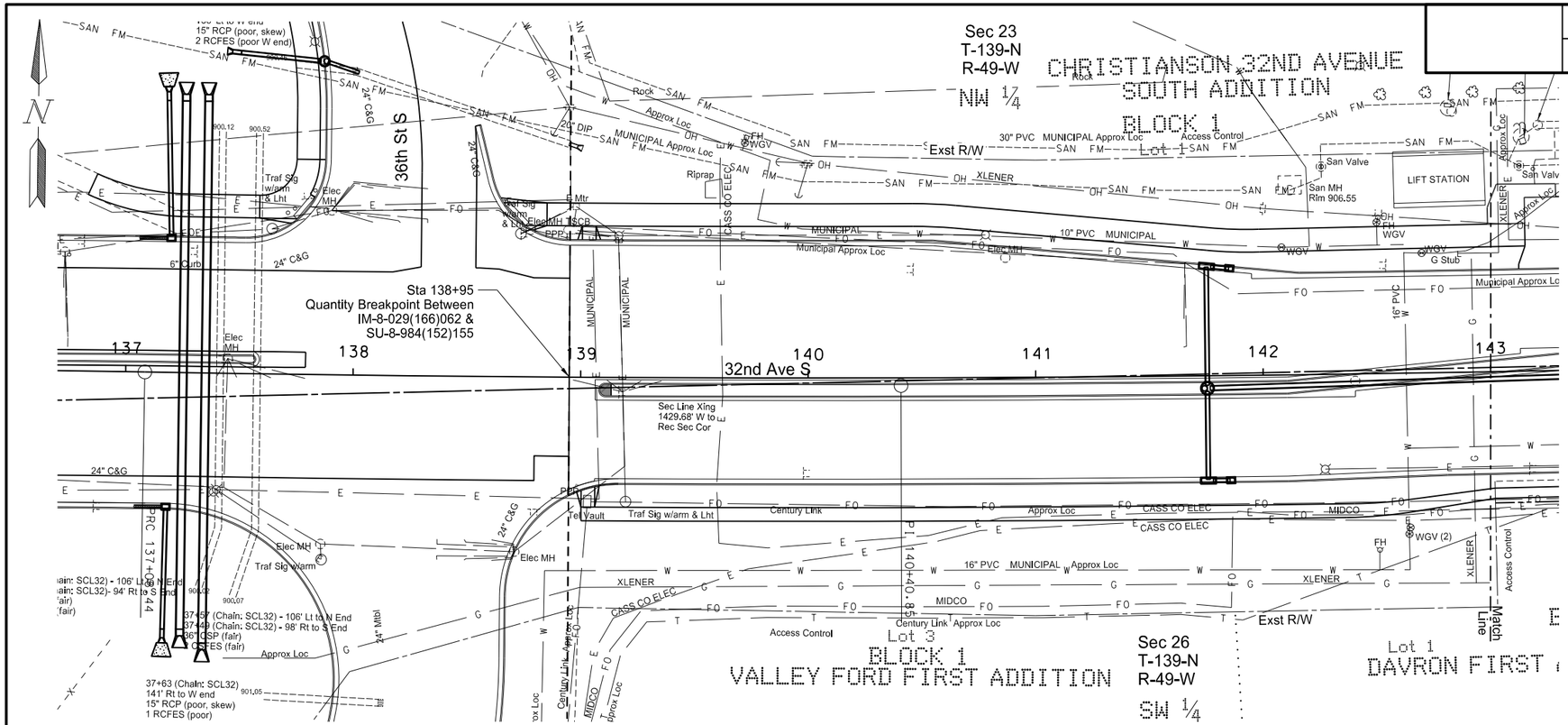
Sanitary Sewer & Water Main Plan & Profile

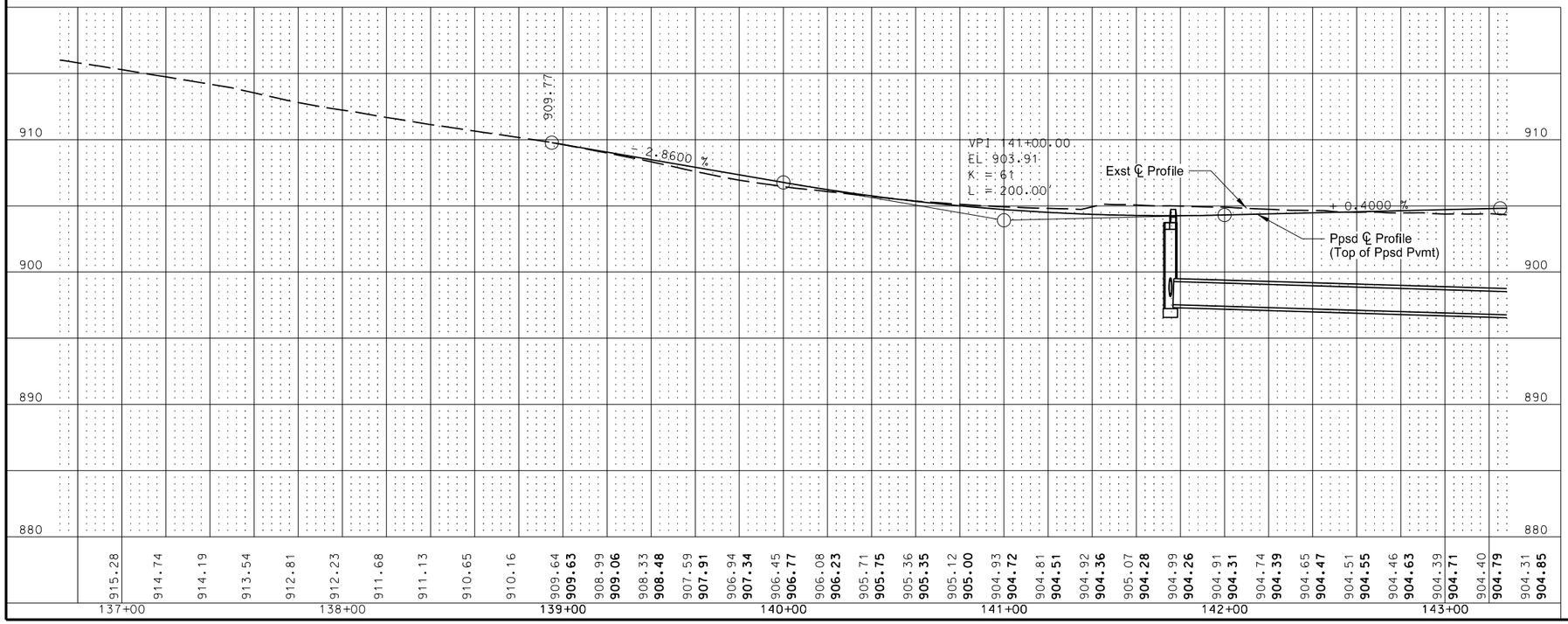
39th St Southwest

Sta 3904+95 to 3909+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	6

NOTE: No Sanitary Sewer or Water Main items on this sheet.





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Sanitary Sewer & Water Main Plan & Profile

32nd Ave South

Sta 138+95 to 143+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	7

SPEC CODE	BID ITEM	QTY	UNIT
724 0210	FITTINGS - DUCTILE IRON		
	Sta 146+01.23 69.87' Lt (45° Bend)	105	LBS
	Sta 146+04.79 66.16' Lt (45° Bend)	105	LBS
	Sta 148+91.60 38.71' Rt (45° Bend)	105	LBS
	Sta 148+98.82 45.94' Rt (45° Bend)	105	LBS
724 0300	GATE VALVE & BOX 6IN		
	Sta 145+28.02 49.07' Rt	1	EA
	Sta 146+01.26 73.84' Lt	1	EA
	Sta 148+98.82 49.21' Rt	1	EA
724 0317	GATE VALVE & BOX 16IN		
	Sta 148+47.23 64.36' Rt	1	EA
724 0410	HYDRANT-INSTALL 5IN		
	Sta 145+28.02 53.05' Rt	1	EA
	Sta 146+01.29 77.81' Lt	1	EA
	Sta 148+98.82 56.50' Rt	1	EA
724 0810	WATERMAIN 6IN PVC		
	Sta 145+28.02 39.32' Rt to 145+28.02 53.05' Rt	14	LF
	Sta 146+01.29 77.81' Lt to 146+07.49 66.14' Lt	16	LF
	Sta 148+91.60 38.71' Rt to 148+98.82 56.50' Rt	21	LF
724 0852	WATERMAIN 16IN PVC		
	Sta 148+47.39 32.14' Rt to 148+47.23 64.36' Rt	32	LF
724 0944	CONNECTION TO EXISTING MAIN		
	Sta 145+28.02 39.32' Rt	1	EA
	Sta 146+07.49 66.14' Lt	1	EA
	Sta 148+47.39 32.14' Rt	1	EA
	Sta 148+91.60 38.71' Rt	1	EA
724 1536	CURED-IN-PLACE PIPE-36IN		
	Sta 143+68.40 48.96' Lt to 149+00.00 21.35' Lt	540	LF

LEGEND

CURED-IN-PLACE PIPE - 36IN

SANITARY MANHOLE LINING (INCLUDED IN THE PRICE BID FOR "CURED-IN-PLACE PIPE-36IN")

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Sanitary Sewer & Water Main Plan & Profile

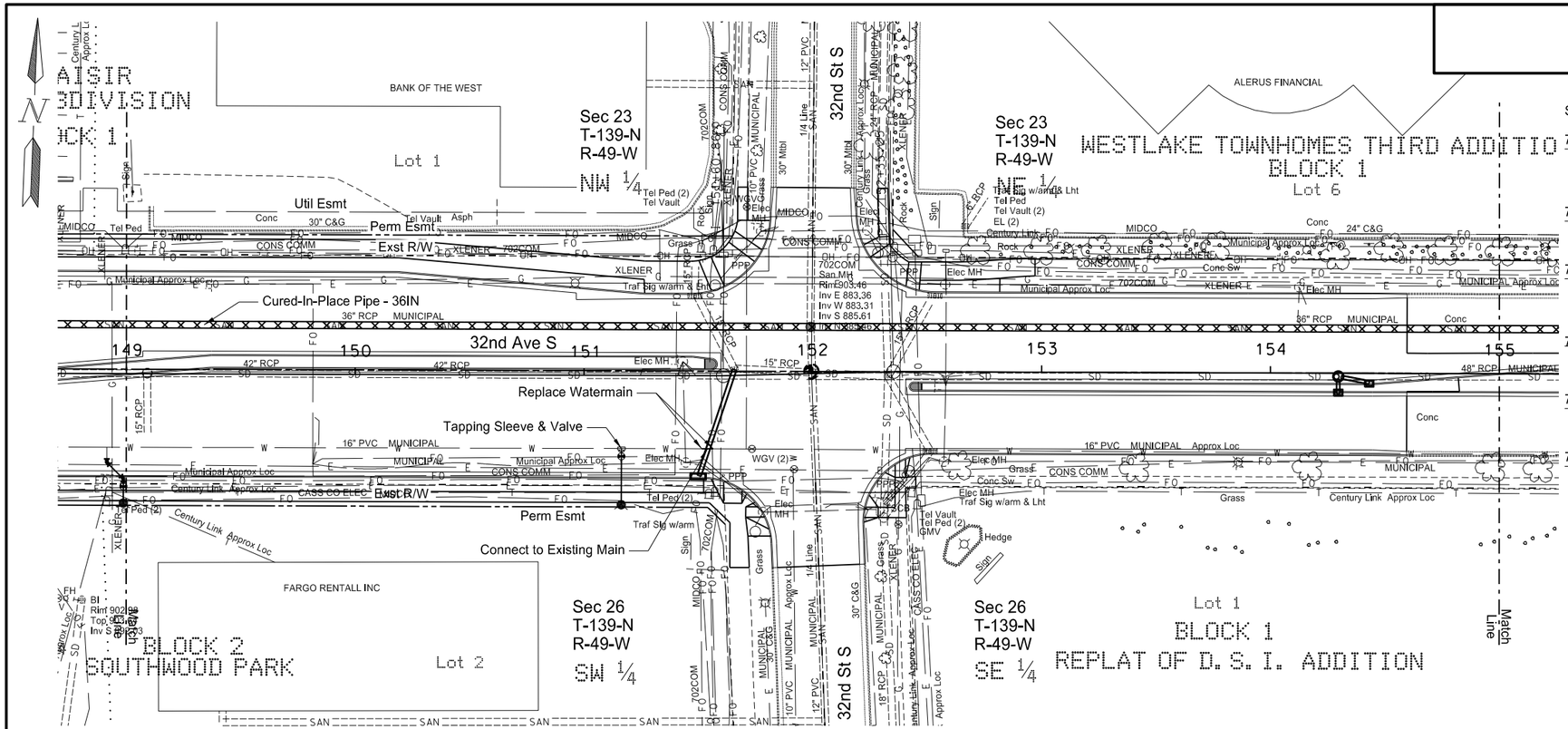
32nd Ave South

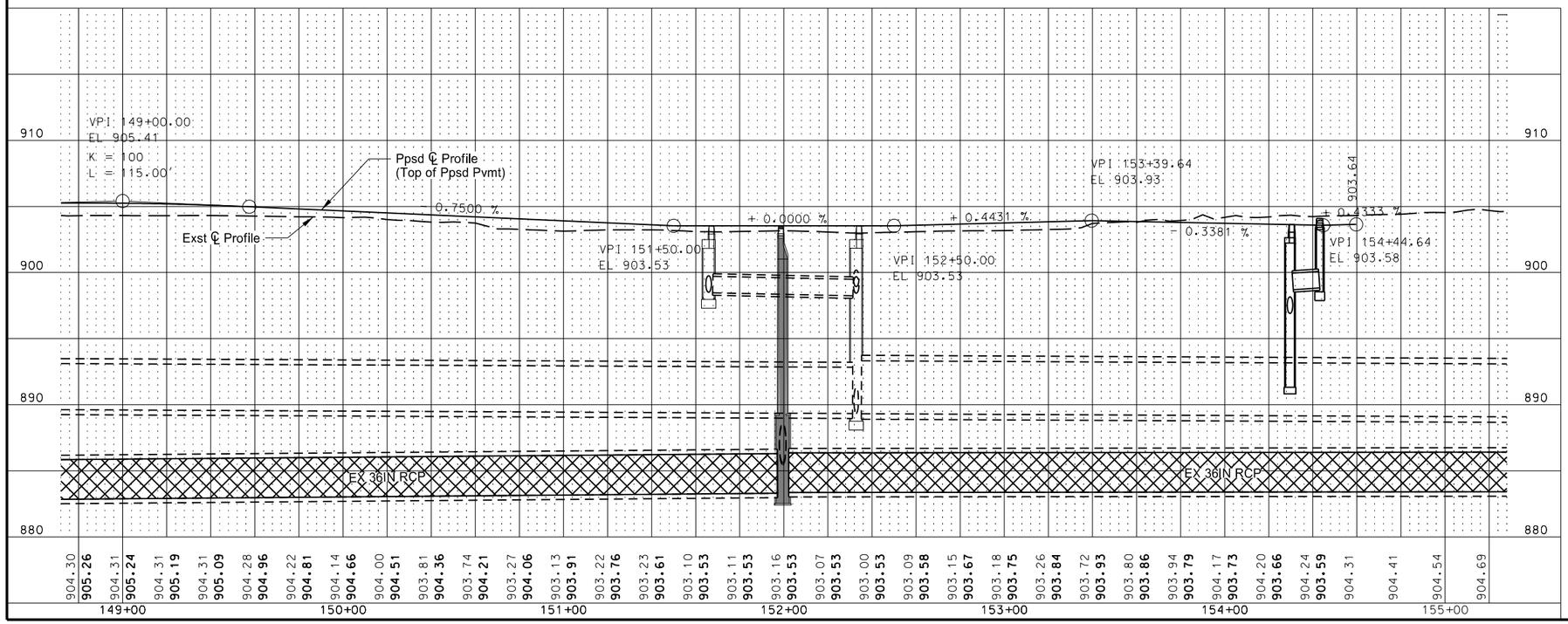
Sta 143+00 to 149+00

12/2/2016 11:44:53 AM mike.johnson T:\Projects\2015\15.103.0105 Fargo 32nd Avenue South Reconstruction\80984155.152\Design\055\055DL_007_P&P.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	8

SPEC CODE	BID ITEM	QTY	UNIT
724 0410	HYDRANT-INSTALL 5IN Sta 151+16.43 56.51' Rt	1	EA
724 0550	TAPPING SLEEVE & VALVE 16IN X 6IN Sta 151+16.43 31.96' Rt	1	EA
724 0810	WATERMAIN 6IN PVC Sta 151+16.43 31.97' Rt to 151+16.43 56.51' Rt	21	LF
724 0852	WATERMAIN 16IN PVC Sta 151+51.56 31.94' Rt to 151+56.57 31.94' Rt	5	LF
724 0944	CONNECTION TO EXISTING MAIN Sta 151+51.56 31.94' Rt & 151+56.57 31.94' Rt	1	EA
724 1536	CURED-IN-PLACE PIPE-36IN Sta 149+00.00 21.35' Lt to 155+00.00 19.48' Lt	600	LF





LEGEND

CURED-IN-PLACE PIPE - 36IN

SANITARY MANHOLE LINING
(INCLUDED IN THE PRICE BID
FOR "CURED-IN-PLACE PIPE-36IN")

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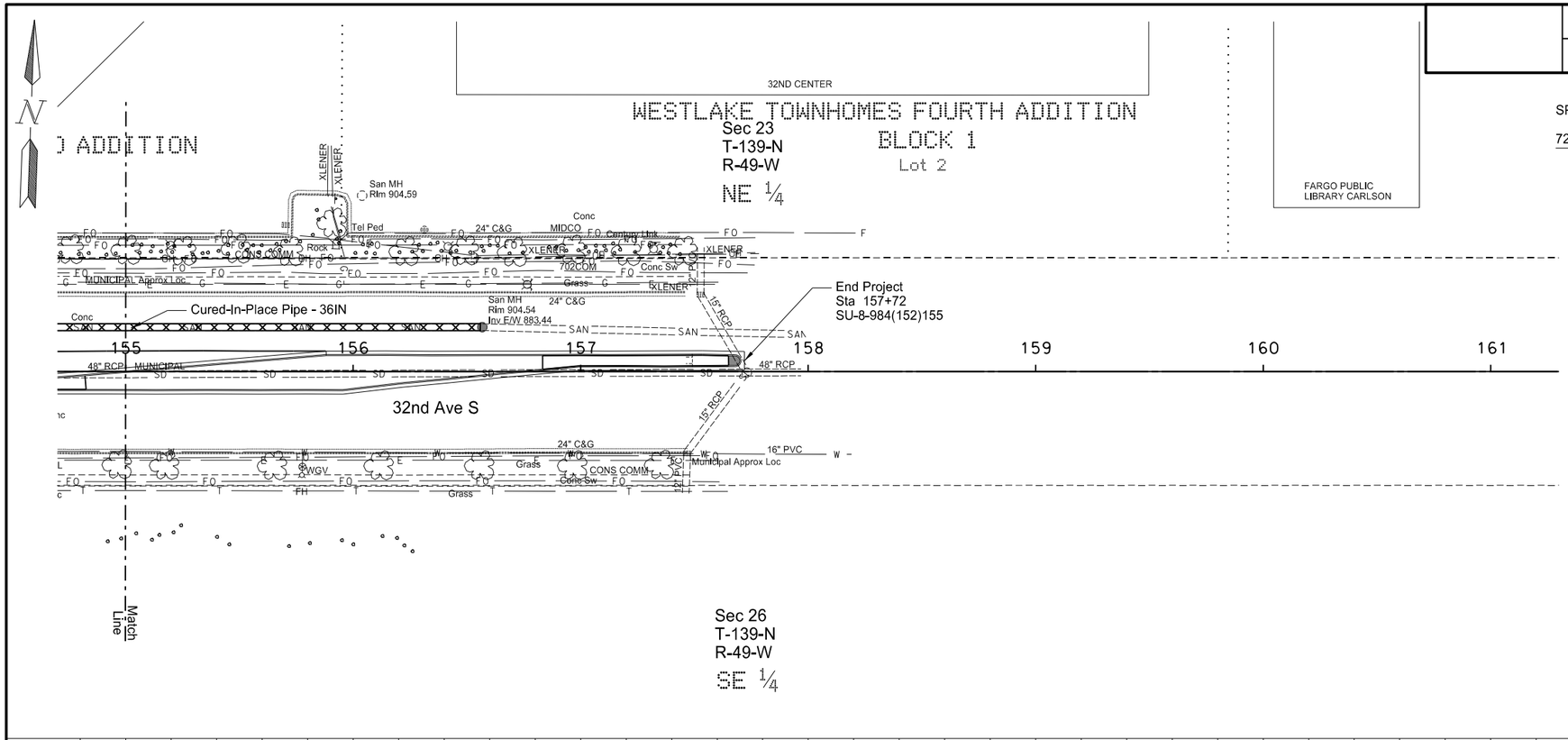
Sanitary Sewer & Water Main Plan & Profile

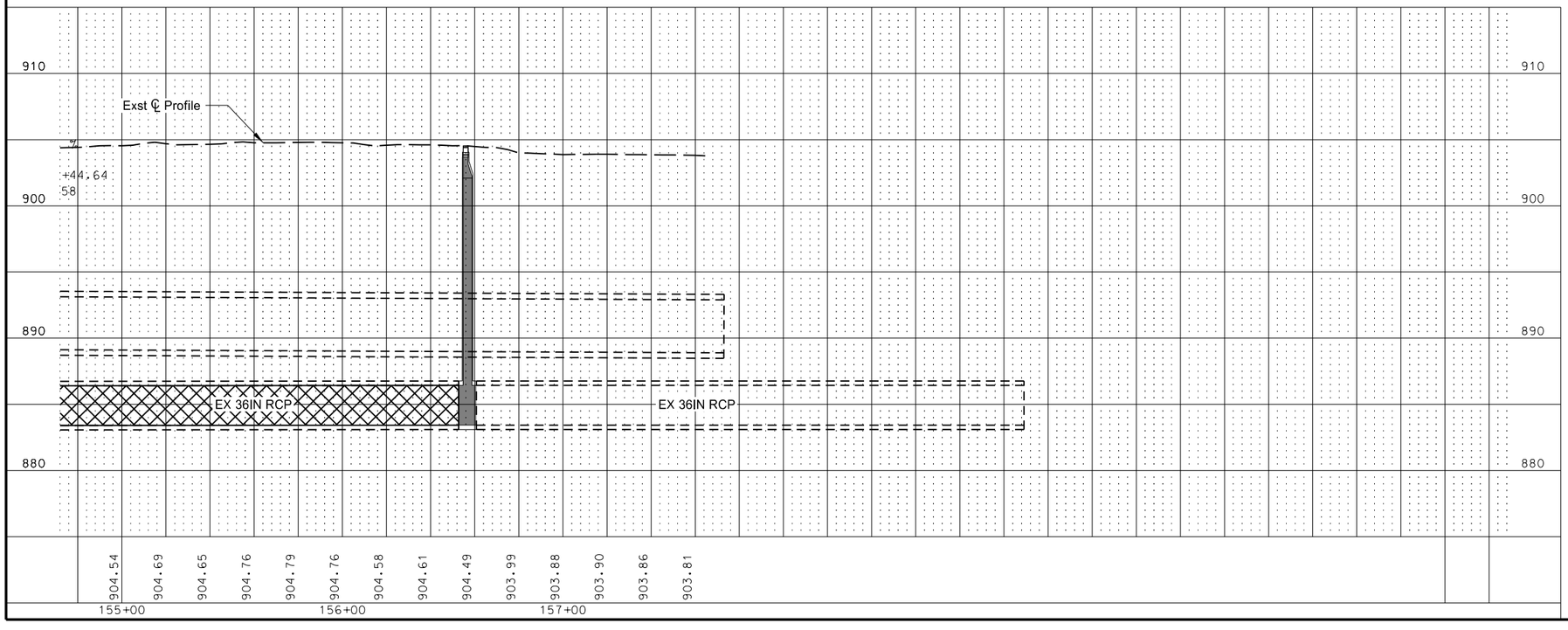
32nd Ave South

Sta 149+00 to 155+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	55	9

SPEC CODE	BID ITEM	QTY	UNIT
724 1536	CURED-IN-PLACE PIPE-36IN Sta 155+00.00 19.48' Lt to 156+56.00 19.52' Lt	156	LF





LEGEND

CURED-IN-PLACE PIPE - 36IN

SANITARY MANHOLE LINING
(INCLUDED IN THE PRICE BID
FOR "CURED-IN-PLACE PIPE-36IN")

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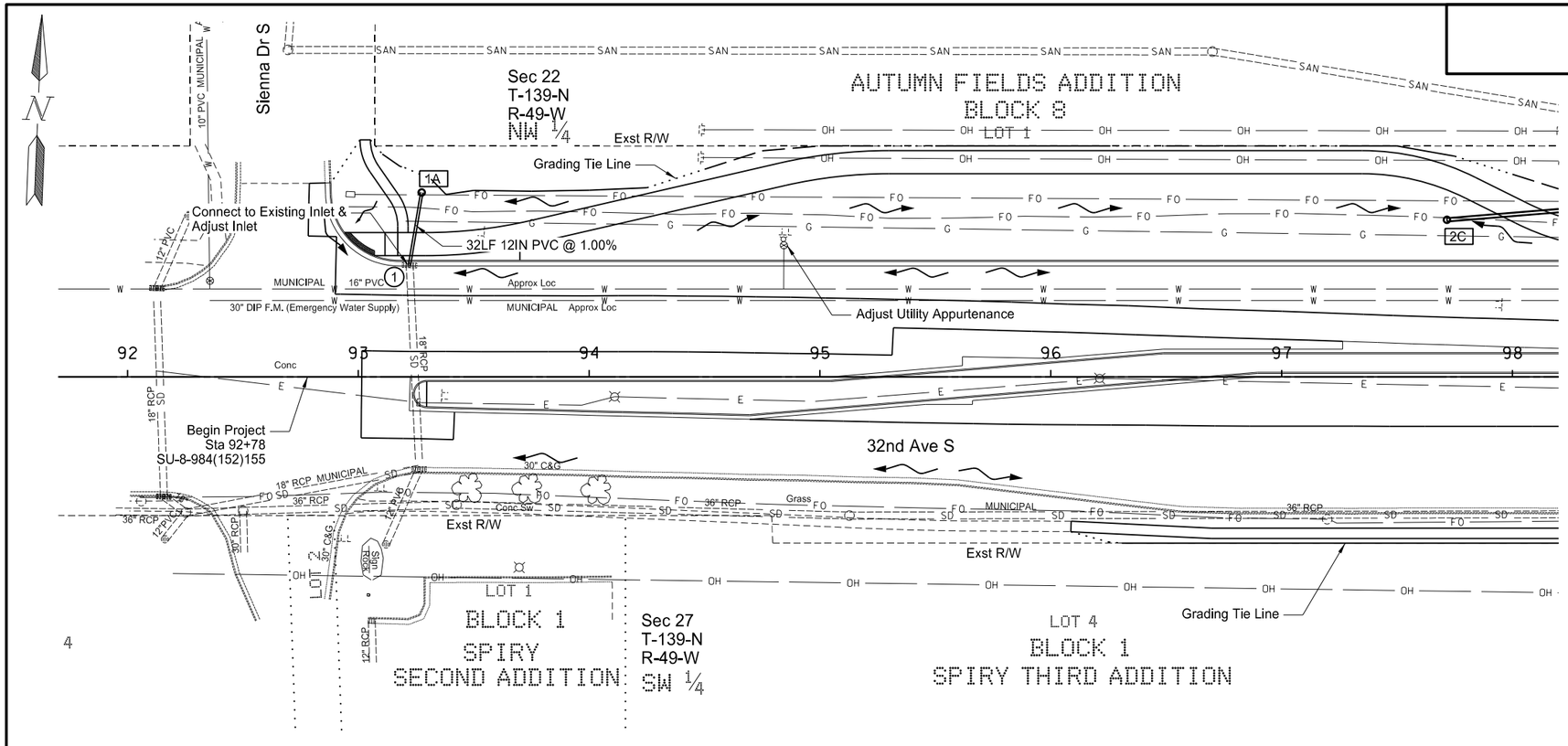
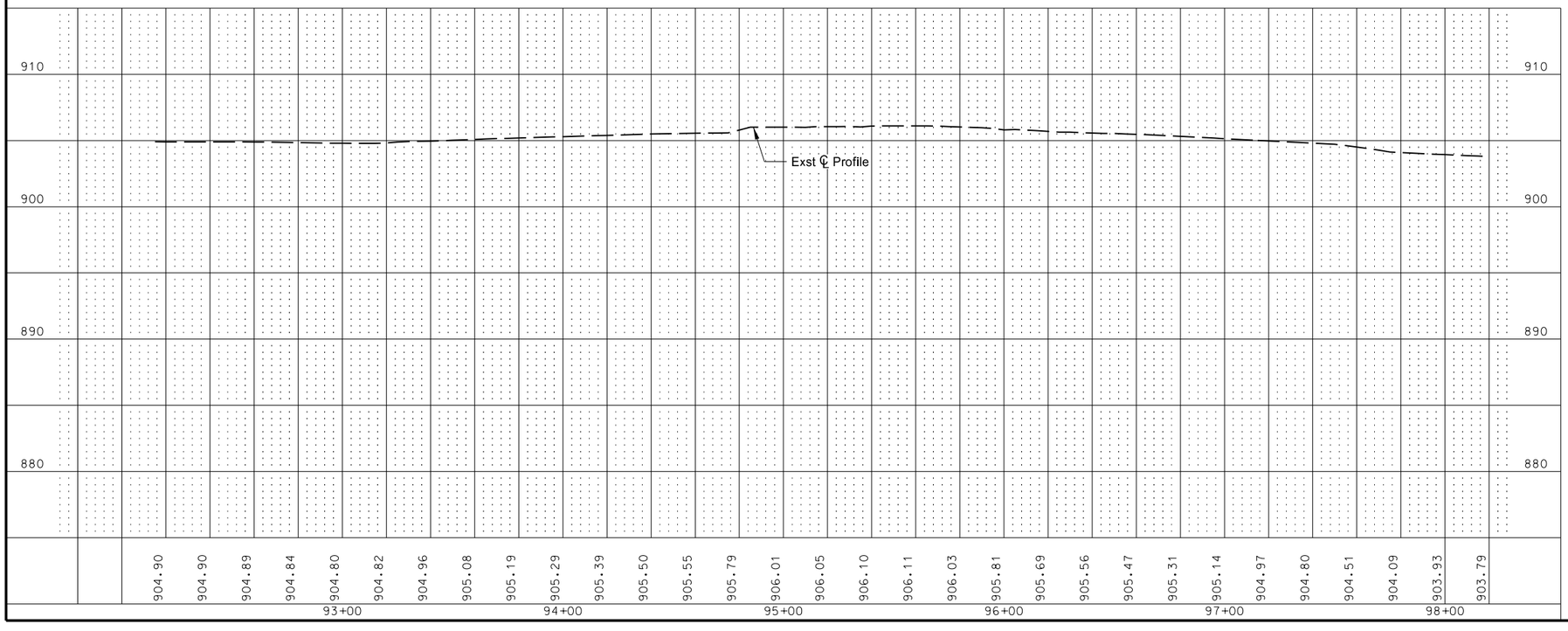
Sanitary Sewer & Water Main Plan & Profile

32nd Ave South

Sta 155+00 to 157+72

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	1





SPEC	CODE	BID ITEM	QTY	UNIT
714	7030	PIPE PVC 12IN		
		1 to 1A	32	LF
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		32nd Ave WB	533	LF
722	2490	MANHOLE STORM CONNECTION		
		1	1	EA
722	3499	INLET		
		2C	1	EA
		1A	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 94+84.40 - 56.98' Lt	1	EA

NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

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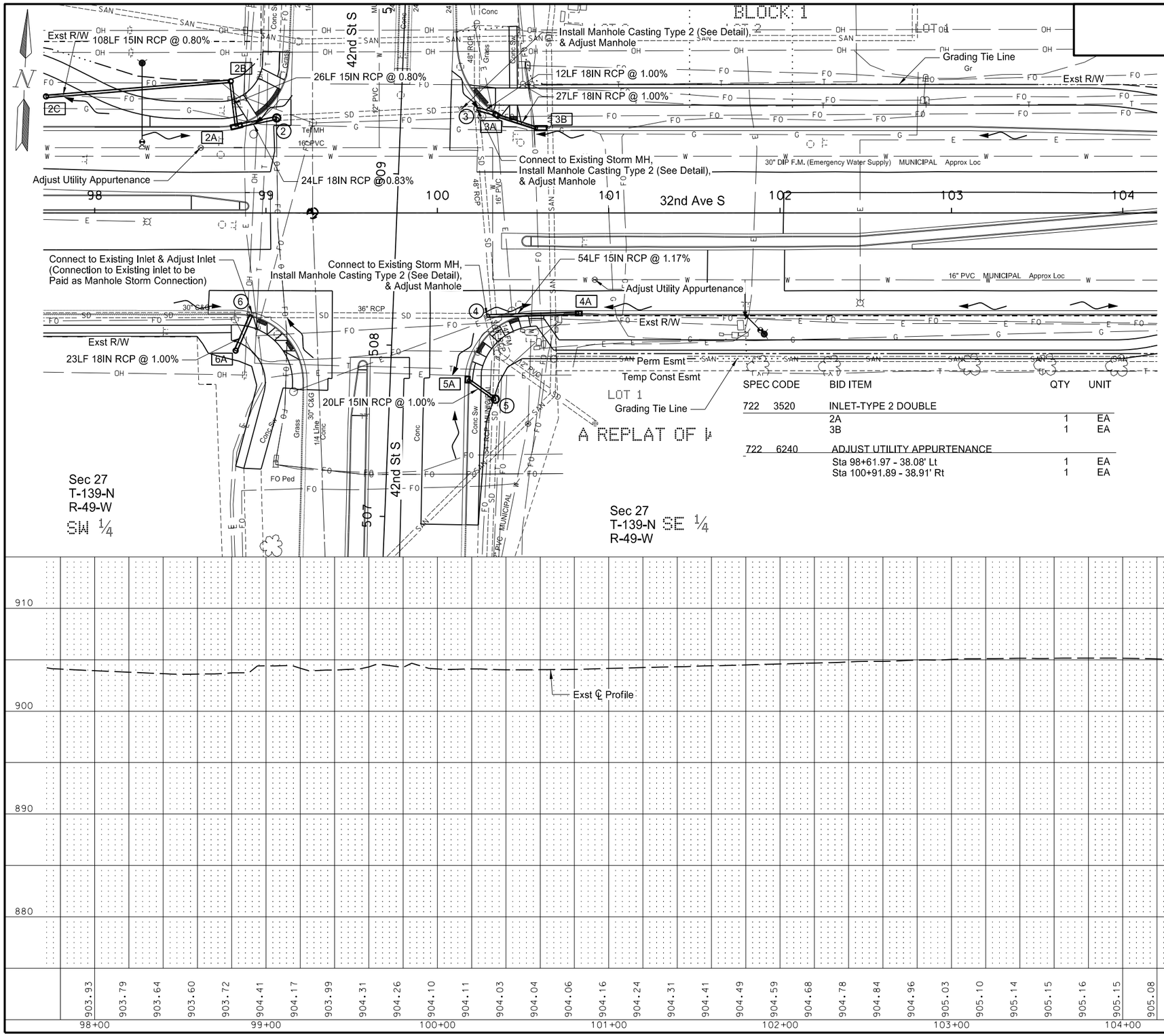
Storm Sewer Plan & Profile

32nd Avenue South

Sta 92+78 to 98+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	2



SPEC CODE	BID ITEM	QTY	UNIT
722 3520	INLET-TYPE 2 DOUBLE		
	2A	1	EA
	3B	1	EA
722 6240	ADJUST UTILITY APPURTENANCE		
	Sta 98+61.97 - 38.08' Lt	1	EA
	Sta 100+91.89 - 38.91' Rt	1	EA

SPEC CODE	BID ITEM	QTY	UNIT
714 0210	PIPE CONC REINF 15IN CL III-STORM DRAIN		
	2A to 2B	26	LF
	2B to 2C	108	LF
	4 to 4A	54	LF
	5 to 5A	20	LF
714 0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
	2 to 2A	24	LF
	3 to 3A	12	LF
	3A to 3B	27	LF
	6 to 6A	23	LF
714 9696	EDGEDRAIN NON PERMEABLE BASE		
	32nd Ave WB	562	LF
	32nd Ave EB	569	LF
722 0100	MANHOLE 48IN		
	2	1	EA
722 0318	MANHOLE CASTING TYPE 2		
	Sta 100+13.95 - 60.50' Lt	1	EA
	3	1	EA
	4	1	EA
722 2490	MANHOLE STORM CONNECTION		
	3	1	EA
	4	1	EA
	6	1	EA
722 2500	MANHOLE SPECIAL		
	5	1	EA
722 3499	INLET		
	2B	1	EA
	6A	1	EA
722 3510	INLET-TYPE 2		
	3A	1	EA
	4A	1	EA
	5A	1	EA

NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

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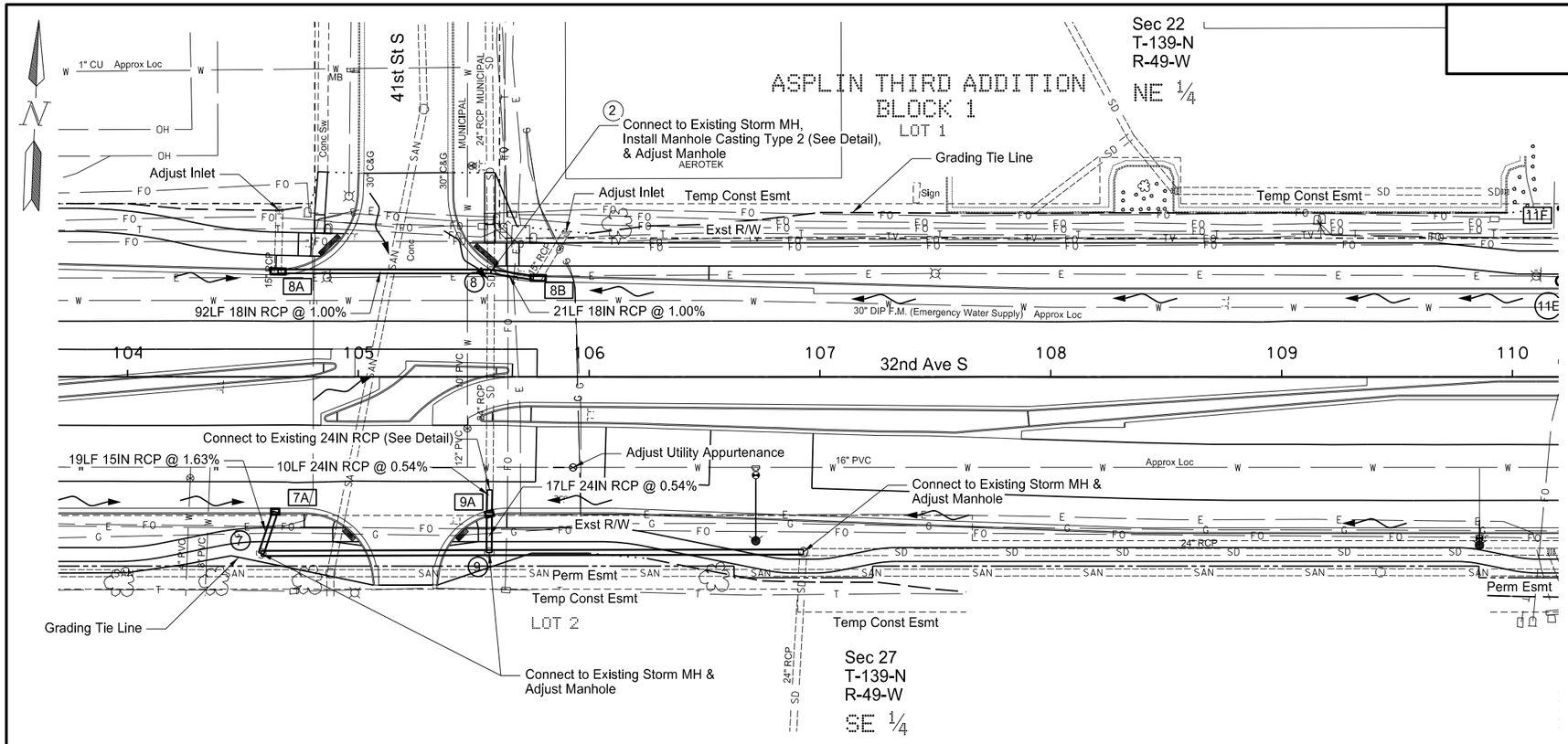
Storm Sewer Plan & Profile

32nd Avenue South

Sta 98+00 to 104+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	3



SPEC	CODE	BID ITEM	QTY	UNIT
714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN		
		7 to 7A	19	LF
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
		8 to 8A	92	LF
		8 to 8B	21	LF
714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN		
		7 to 9	99	LF
		9 to 9A	17	LF
		9A to Sta 105+56.91 - 49.06' Rt	10	LF
		9 to Sta 106+92.77 - 75.98' Rt	136	LF
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		32nd Ave WB	617	LF
		32nd Ave EB	607	LF
722	0318	MANHOLE CASTING TYPE 2		
		8	1	EA
722	2490	MANHOLE STORM CONNECTION		
		7	1	EA
		8	1	EA
		9	1	EA
		Sta 106+92.77 - 75.98' Rt	1	EA
722	3510	INLET-TYPE 2		
		7A	1	EA
		9A	1	EA
722	3520	INLET-TYPE 2 DOUBLE		
		8A	1	EA
		8B	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 105+93.01 - 39.29' Rt	1	EA

NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

(2) New casting shall be adjusted to be located outside the proposed curb & gutter.

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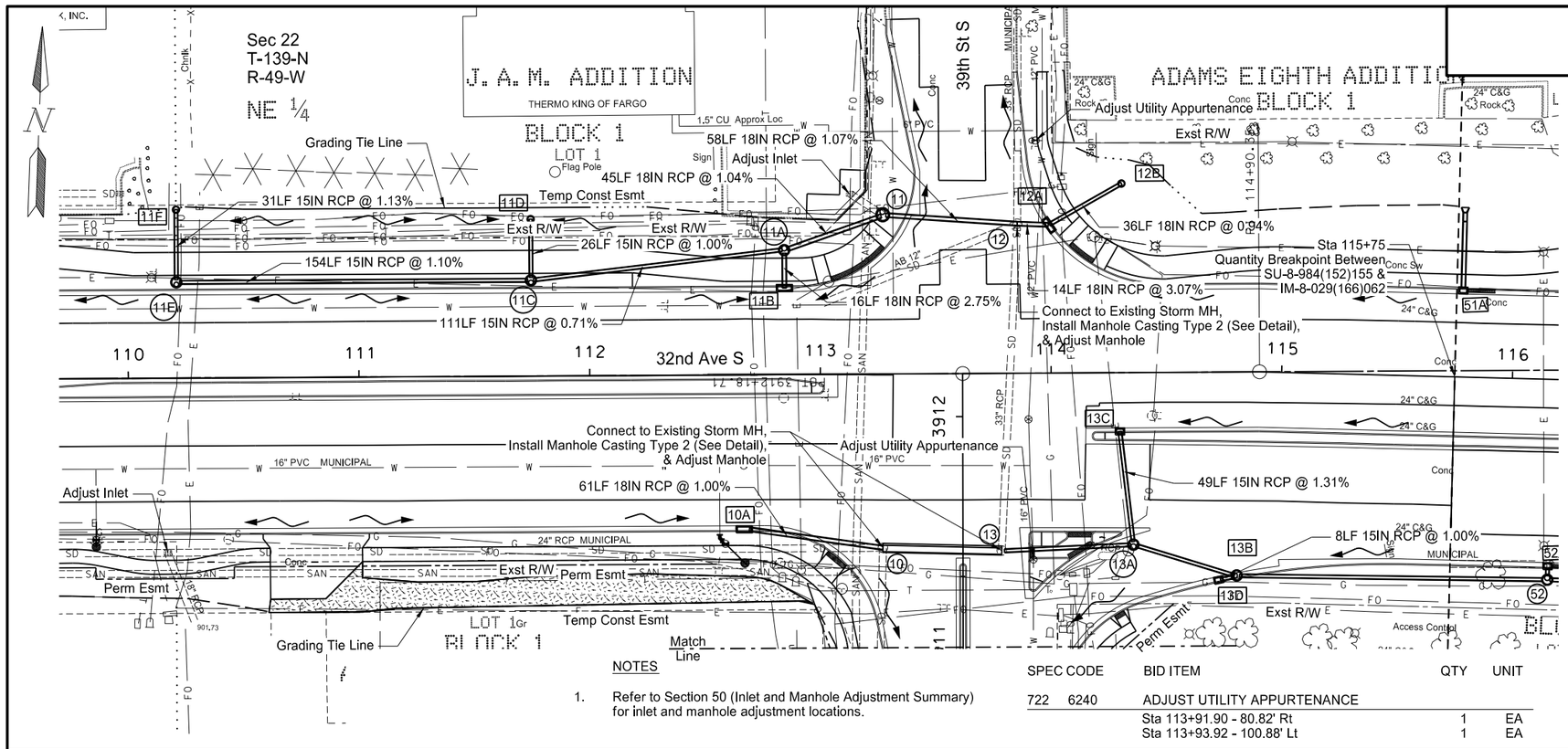
Storm Sewer Plan & Profile

32nd Avenue South

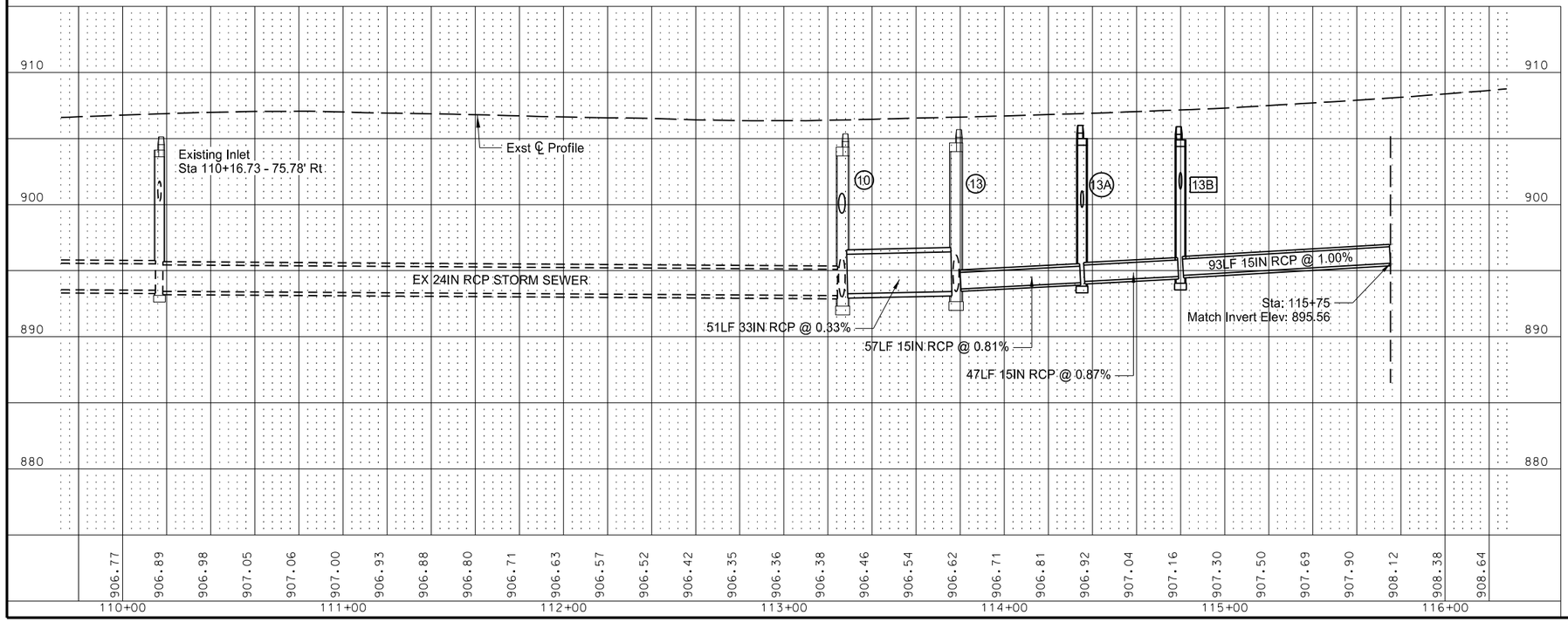
Sta 104+00 to 110+00



NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

SPEC CODE		BID ITEM	QTY	UNIT
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 113+91.90 - 80.82' Rt	1	EA
		Sta 113+93.92 - 100.88' Lt	1	EA



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	4

SPEC CODE		BID ITEM	QTY	UNIT
714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN		
		11A to 11C	111	LF
		11C to 11D	26	LF
		11C to 11E	154	LF
		11E to 11F	31	LF
		13 to 13A	57	LF
		13A to 13B	47	LF
		13A to 13C	49	LF
		13B to 13D	8	LF
		13B to Sta 115+75.00	93	LF
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
		10 to 10A	61	LF
		11 to 11A	45	LF
		11A to 11B	16	LF
		11 to 12	58	LF
		12 to 12A	14	LF
		12A to 12B	36	LF
714	0870	PIPE CONC REINF 33IN CL III-STORM DRAIN		
		10 to 13	51	LF
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		32nd Ave WB	690	LF
		32nd Ave EB	522	LF
722	0100	MANHOLE 48IN		
		11A	1	EA
		11C	1	EA
		11E	1	EA
		13A	1	EA
722	0110	MANHOLE 60IN		
		11	1	EA
722	0318	MANHOLE CASTING TYPE 2		
		10	1	EA
		12	1	EA
		13	1	EA
722	2490	MANHOLE STORM CONNECTION		
		10	1	EA
		12	1	EA
		13	1	EA
722	3499	INLET		
		11D	1	EA
		11F	1	EA
		12B	1	EA
722	3510	INLET-TYPE 2		
		13C	1	EA
		13D	1	EA
722	3520	INLET-TYPE 2 DOUBLE		
		10A	1	EA
		11B	1	EA
		12A	1	EA
722	3701	INLET SPECIAL-TYPE 2 48IN		
		13B	1	EA

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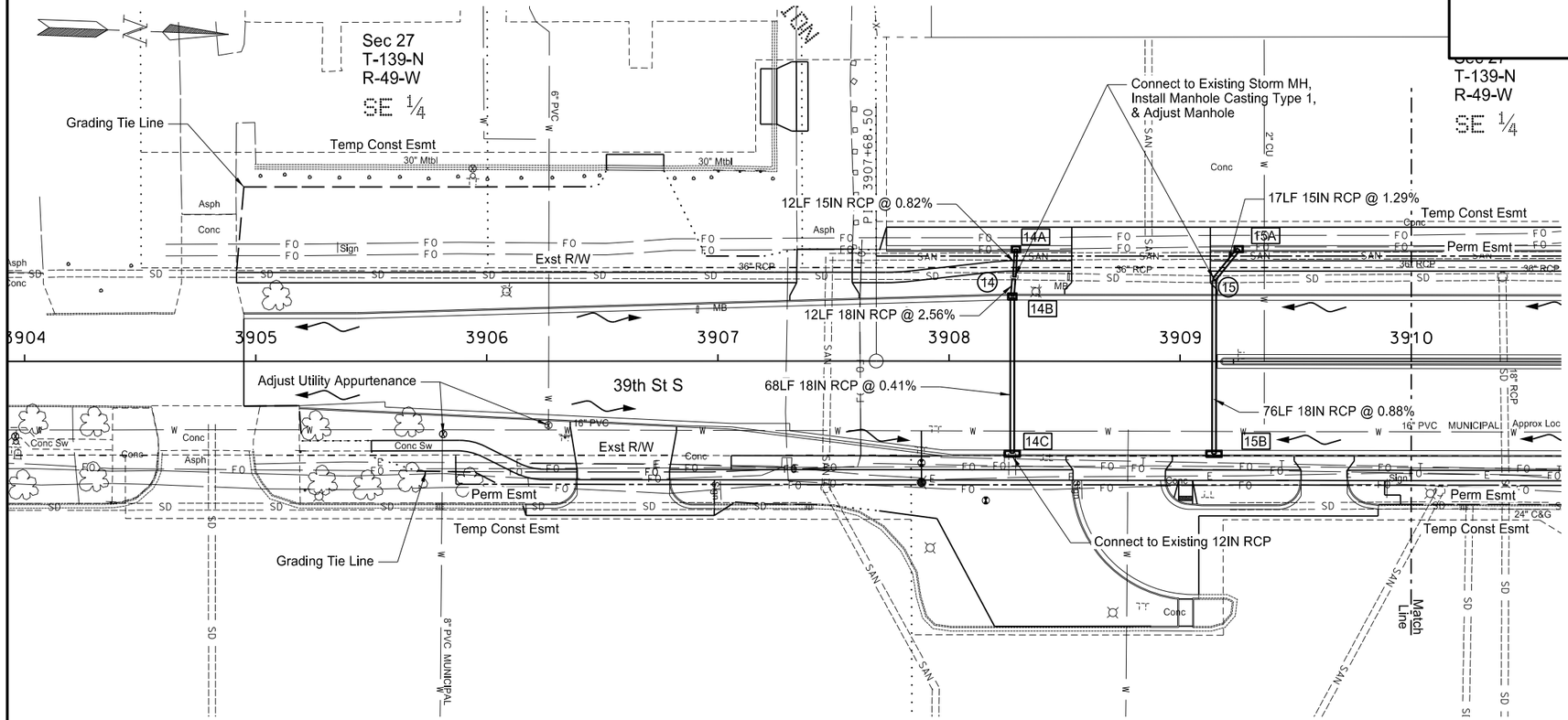
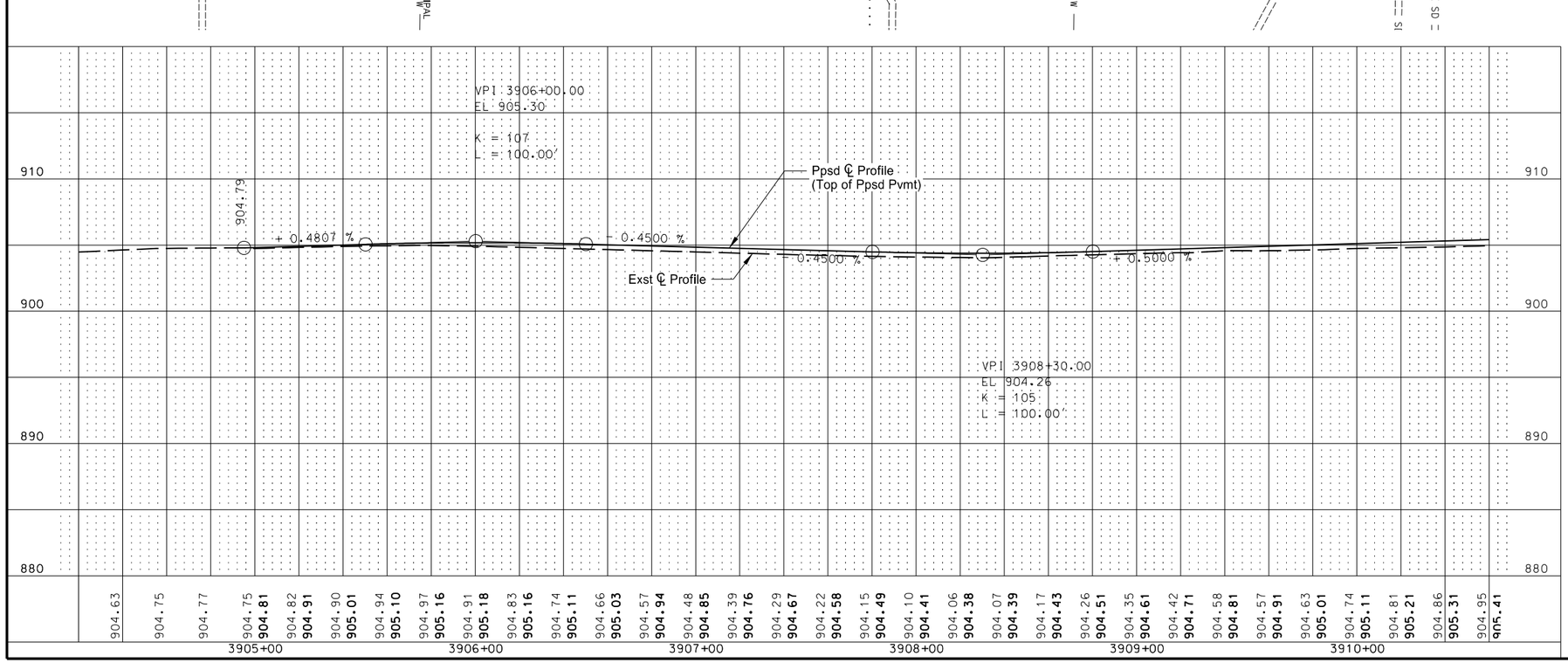
Storm Sewer Plan & Profile

32nd Avenue South

Sta 110+00 to 115+75

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	5





SPEC CODE		BID ITEM	QTY	UNIT
714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN		
		14 to 14A	12	LF
		15 to 15A	17	LF
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
		14 to 14B	12	LF
		14B to 14C	68	LF
		15 to 15B	76	LF
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		39th Ave NB	482	LF
		39th Ave SB	505	LF
722	0317	MANHOLE CASTING TYPE 1		
		14	1	EA
		15	1	EA
722	2490	MANHOLE STORM CONNECTION		
		14	1	EA
		14C	1	EA
		15	1	EA
722	3510	INLET-TYPE 2		
		14A	1	EA
		14B	1	EA
		15A	1	EA
722	3520	INLET-TYPE 2 DOUBLE		
		14C	1	EA
		15B	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 3905+81.07 - 31.54' Rt	1	EA
		Sta 3906+26.67 - 27.71' Rt	1	EA

NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

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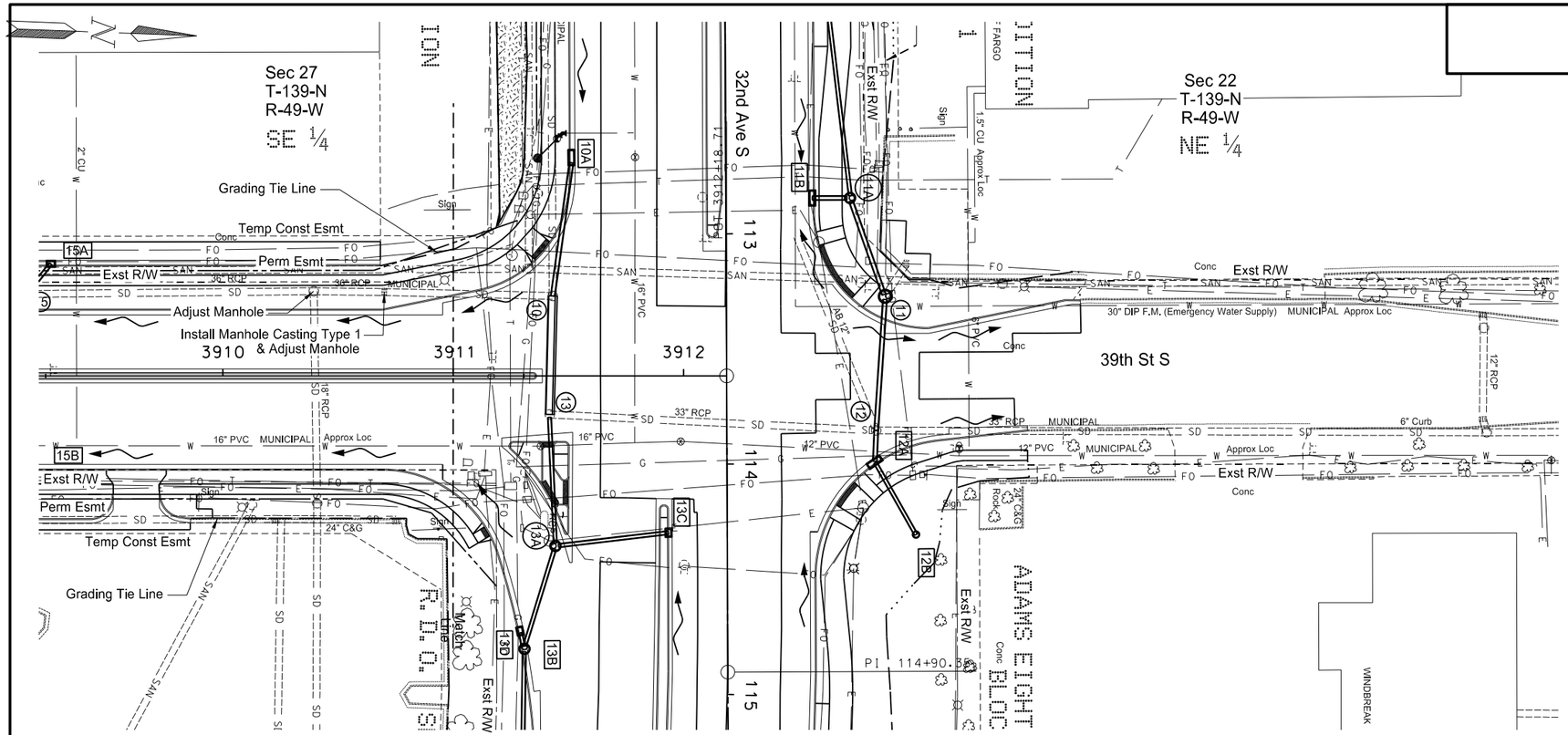
Storm Sewer Plan & Profile

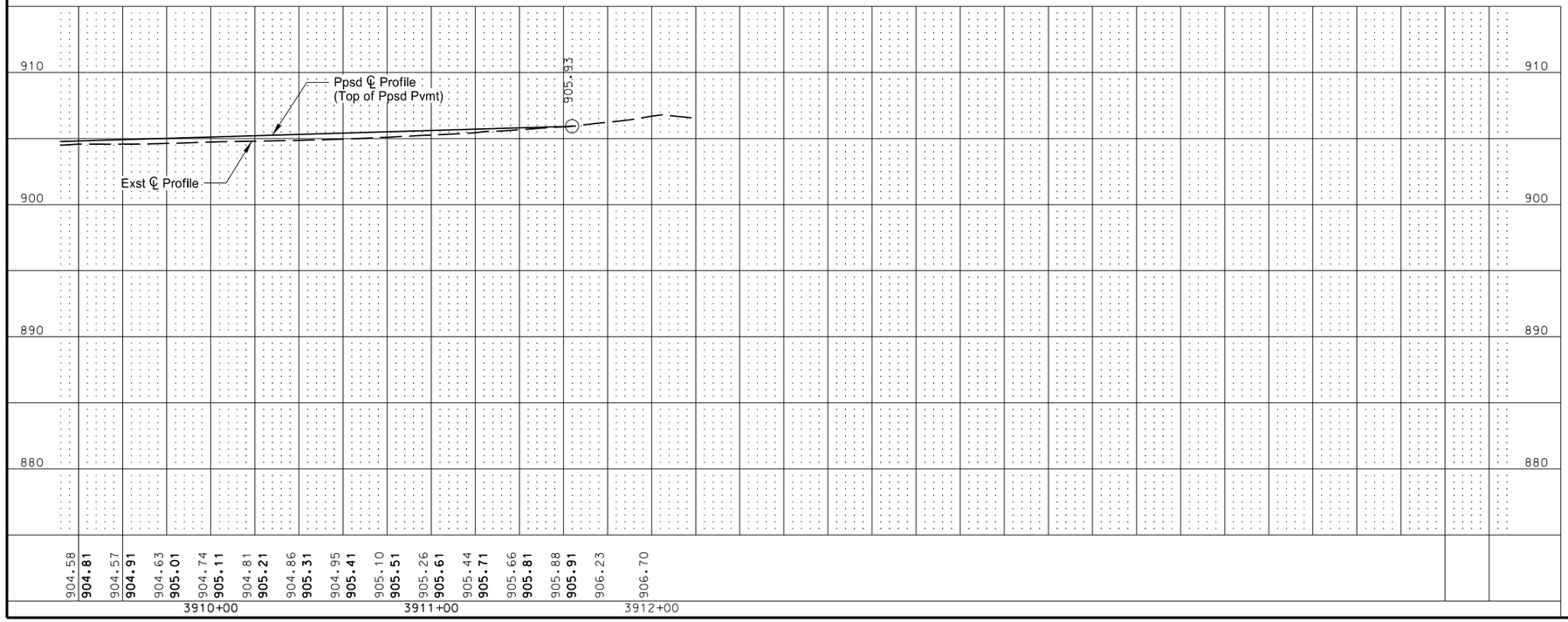
39th Street SW

Sta 3904+50 to 3910+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	6

SPEC CODE		BID ITEM	QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		39th St SB	101	LF
		39th St NB	104	LF
722	0317	MANHOLE CASTING TYPE 1		
		Sta 3910+70.06 - 36.39' Lt	1	EA





NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

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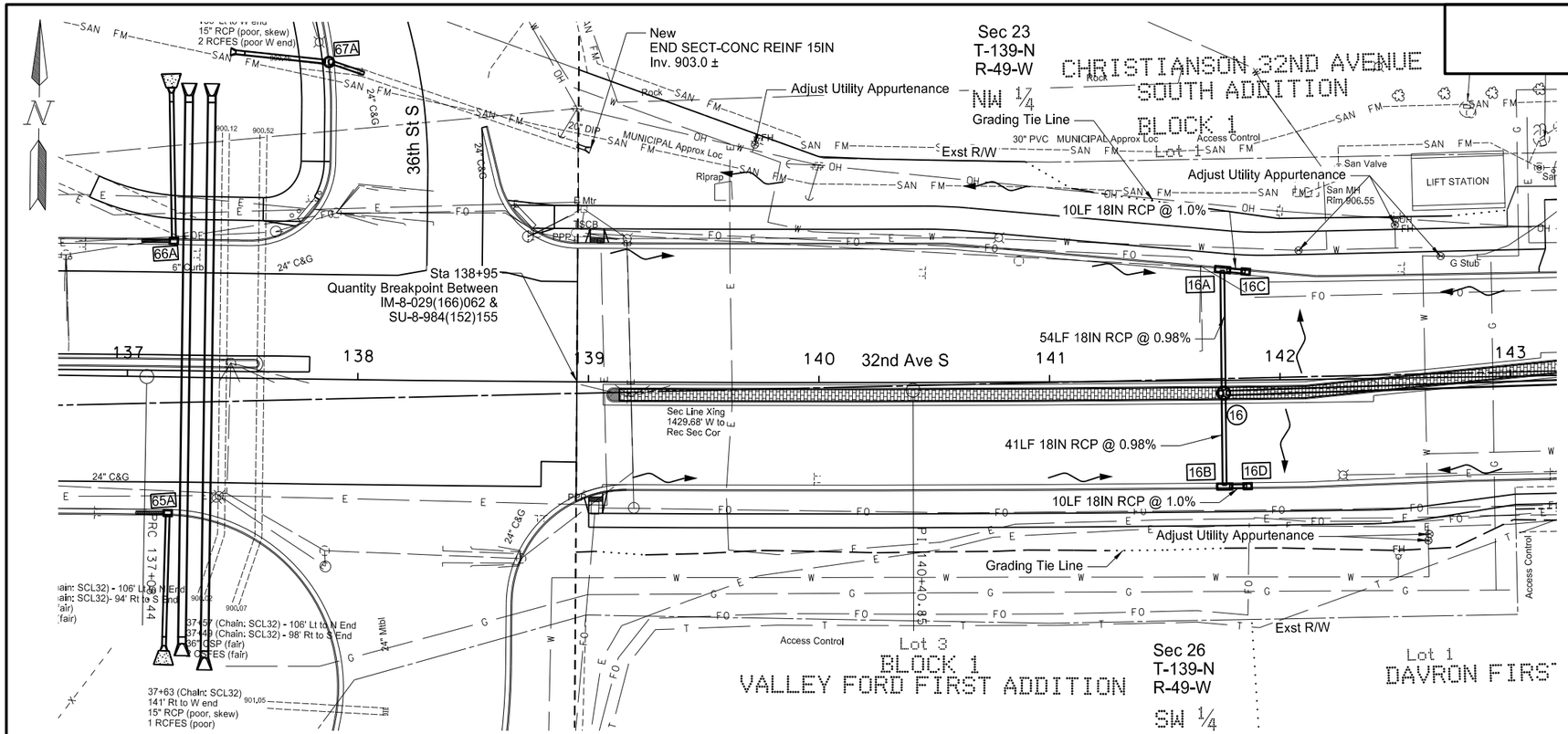
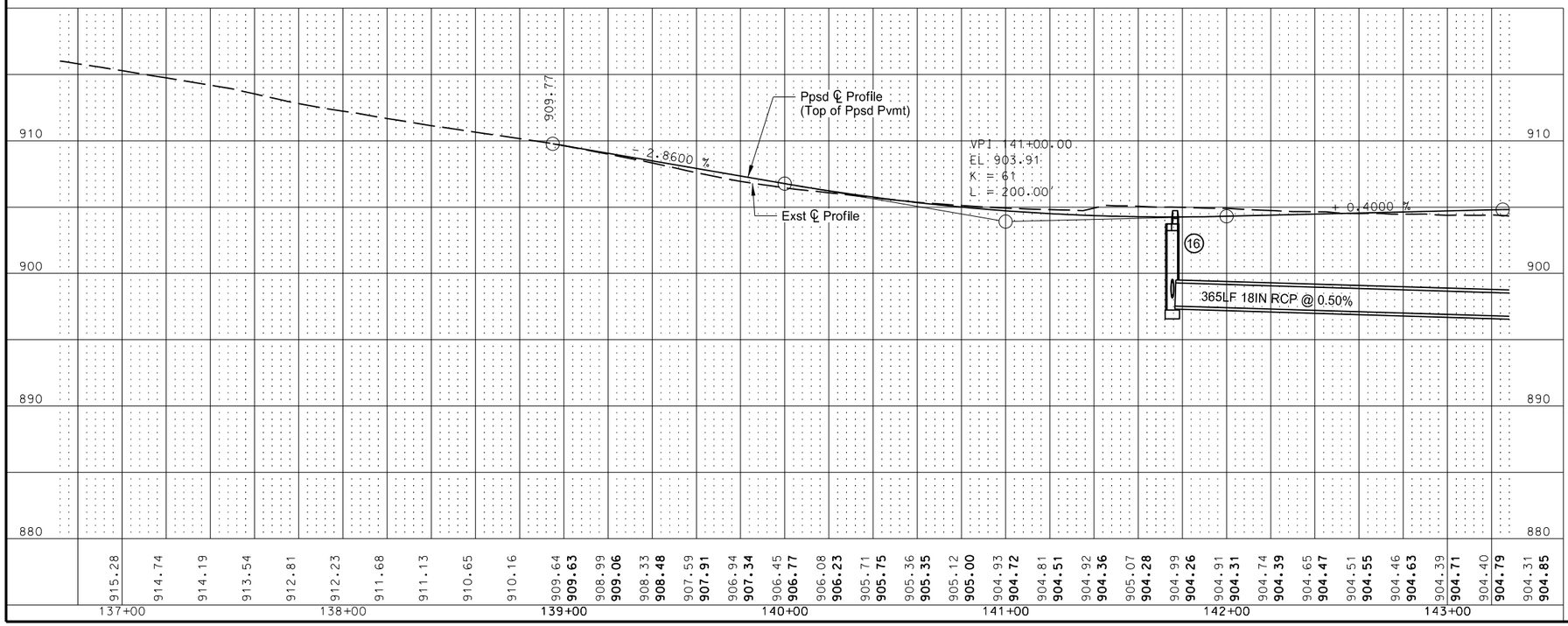
Storm Sewer Plan & Profile

39th Street SW

Sta 3910+00 to 3911+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	7





SPEC CODE		BID ITEM	QTY	UNIT
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
		16 to 16A	54	LF
		16A to 16C	10	LF
		16 to 16B	41	LF
		16B to 16D	10	LF
714	3005	END SECT - CONC REINF 15IN		
		Sta 139+00.17 - 100' Lt	1	EA
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		32nd Ave WB	404	LF
		32nd Ave EB	407	LF
722	0110	MANHOLE 60IN		
		16	1	EA
722	3510	INLET-TYPE 2		
		16C	1	EA
		16D	1	EA
722	3520	INLET-TYPE 2 DOUBLE		
		16A	1	EA
		16B	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 139+72.09 - 103.21' Lt	1	EA
		Sta 142+08.75 - 56.04' Lt	1	EA
		Sta 142+50.84 - 66.44' Lt	1	EA
		Sta 142+63.20 - 70.64' Rt	2	EA
		Sta 142+70.52 - 52.61' Lt	1	EA

NOTES

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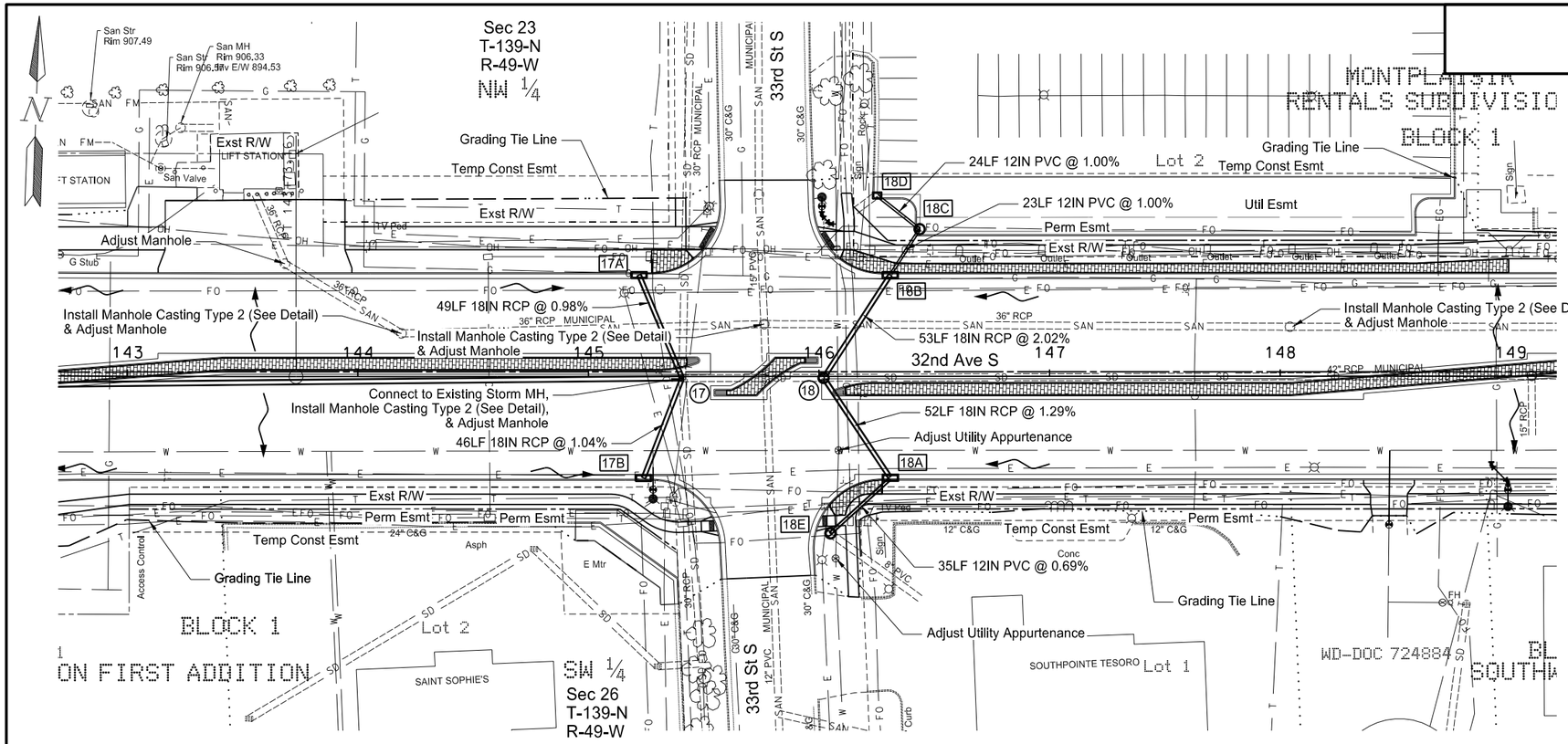
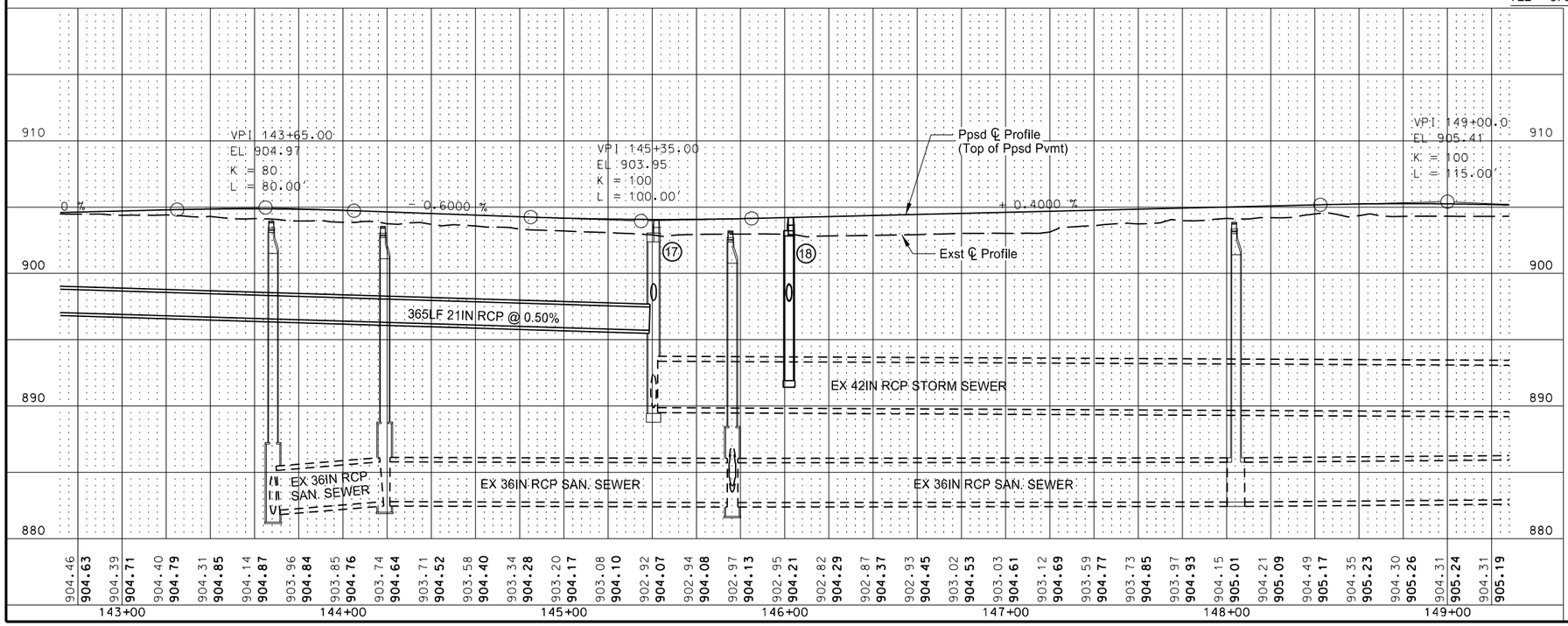
Storm Sewer Plan & Profile

32nd Avenue South

Sta 137+00 to 143+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	8





SPEC CODE	BID ITEM	QTY	UNIT
714 0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
	17 to 17A	49	LF
	17 to 17B	46	LF
	18 to 18A	52	LF
	18 to 18B	53	LF
714 0405	PIPE CONC REINF 21IN CL III-STORM DRAIN		
	16 to 17	365	LF
714 7030	PIPE PVC 12IN		
	18B to 18C	23	LF
	18C to 18D	24	LF
	18A to 18E	35	LF
714 9696	EDGEDRAIN NON PERMEABLE BASE		
	32nd Ave WB	618	LF
	32nd Ave EB	617	LF
722 0100	MANHOLE 48IN		
	18E	1	EA
722 0318	MANHOLE CASTING TYPE 2		
	17	1	EA
	Sta 144+18.94 - 18.70' Lt	1	EA
	Sta 145+76.26 - 22.71' Lt	1	EA
	Sta 148+04.29 - 21.51' Lt	1	EA
722 2490	MANHOLE STORM CONNECTION		
	17	2	EA
722 2500	MANHOLE SPECIAL		
	18	1	EA
722 3510	INLET-TYPE 2		
	18D	1	EA
722 3520	INLET-TYPE 2 DOUBLE		
	17A	1	EA
	17B	1	EA
	18A	1	EA
	18B	1	EA
722 3701	INLET SPECIAL-TYPE 2 48IN		
	18C	1	EA
722 6240	ADJUST UTILITY APPURTENANCE		
	Sta 146+07.17 - 78.96' Rt	1	EA
	Sta 146+08.49 - 32.06' Rt	1	EA

NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

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Storm Sewer Plan & Profile

32nd Avenue South

Sta 143+00 to 149+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(152)155	60	9

SPEC	CODE	BID ITEM	QTY	UNIT
714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN		
		20 to 20A	7	LF
		20 to 20B	14	LF
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN		
		19 to 19A	50	LF
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		32nd Ave WB	584	LF
		32nd Ave EB	582	LF
722	0318	MANHOLE CASTING TYPE 2		
		19	1	EA
		Sta 151+99.47 - 20.43' Lt	1	EA
		Sta 152+32.82 - 1.98' Rt	1	EA
722	2490	MANHOLE STORM CONNECTION		
		19	1	EA
722	2500	MANHOLE SPECIAL		
		20	1	EA
722	3510	INLET-TYPE 2		
		20A	1	EA
		20B	1	EA
722	3520	INLET-TYPE 2 DOUBLE		
		19A	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 151+72.64 - 32.26' Rt	1	EA
		Sta 151+90.84 - 41.54' Rt	1	EA
		Sta 151+72.89 - 73.49' Lt	1	EA

NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.
2. New casting shall be adjusted to be located outside the proposed curb & gutter.

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Storm Sewer Plan & Profile

32nd Avenue South

Sta 149+00 to 155+00

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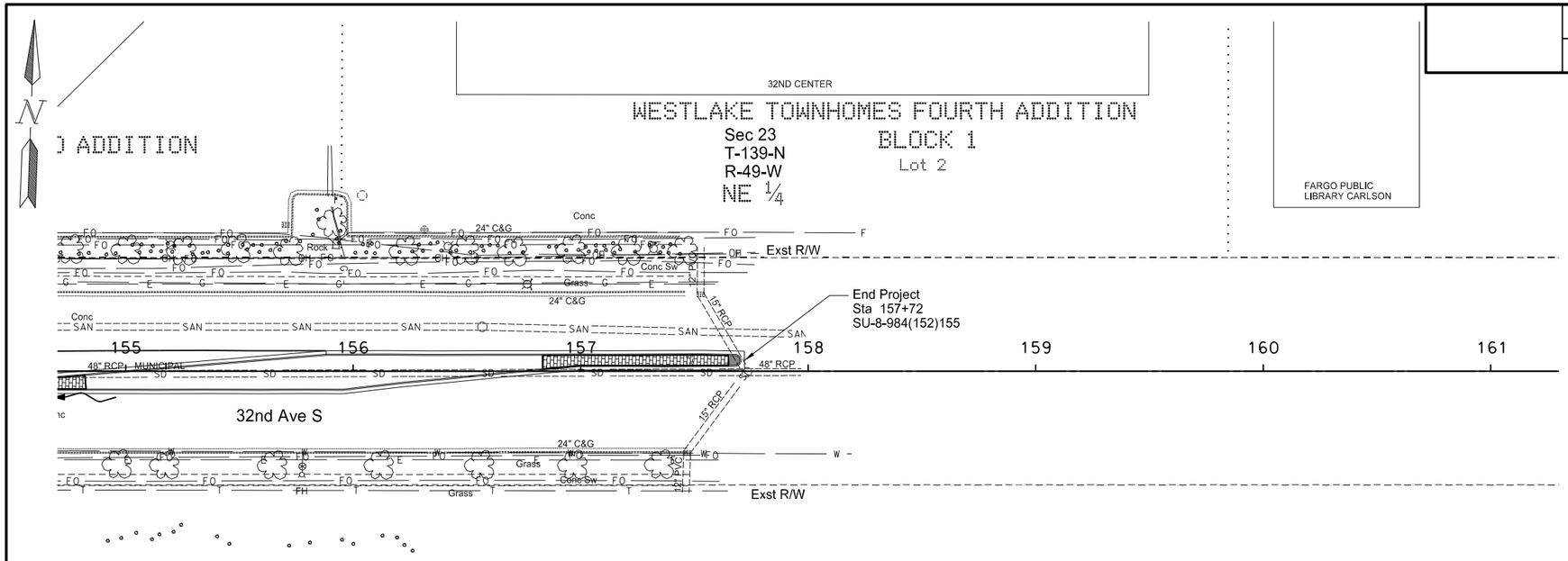
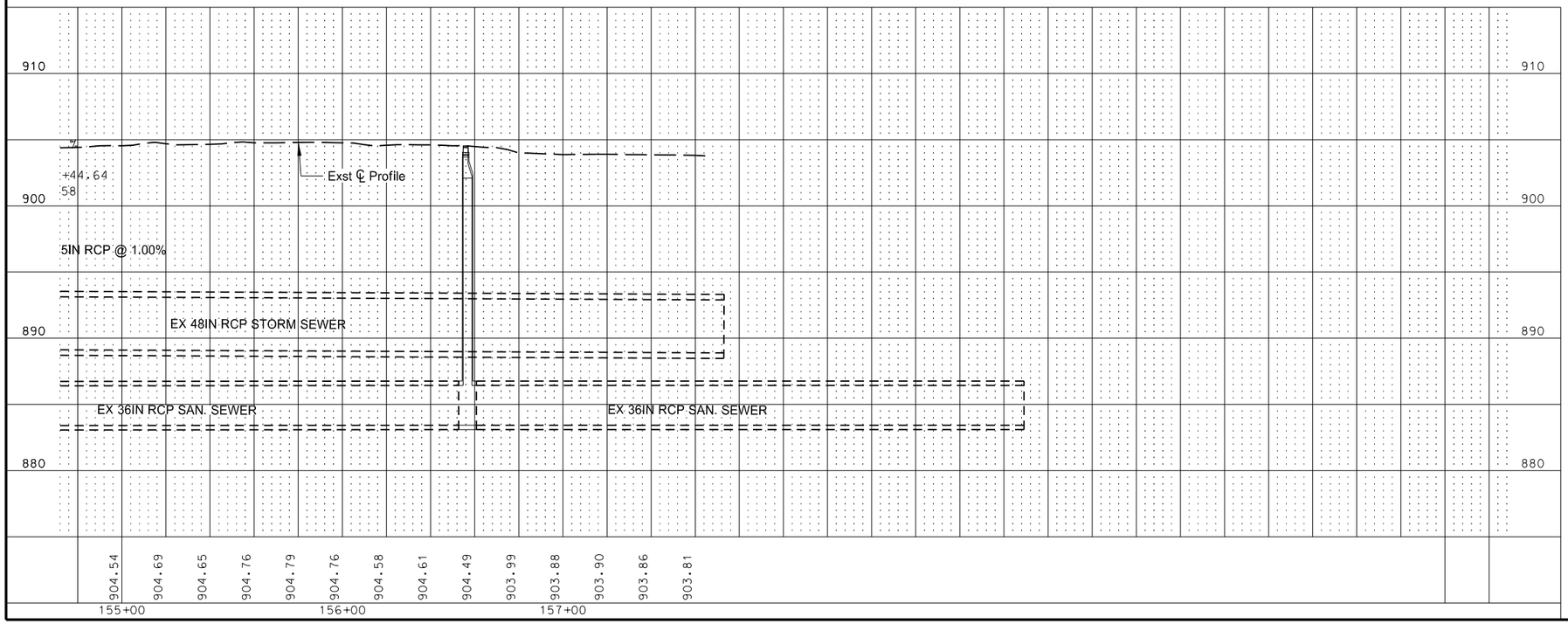
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(152)155	60	10





NOTES

1. Refer to Section 50 (Inlet and Manhole Adjustment Summary) for inlet and manhole adjustment locations.

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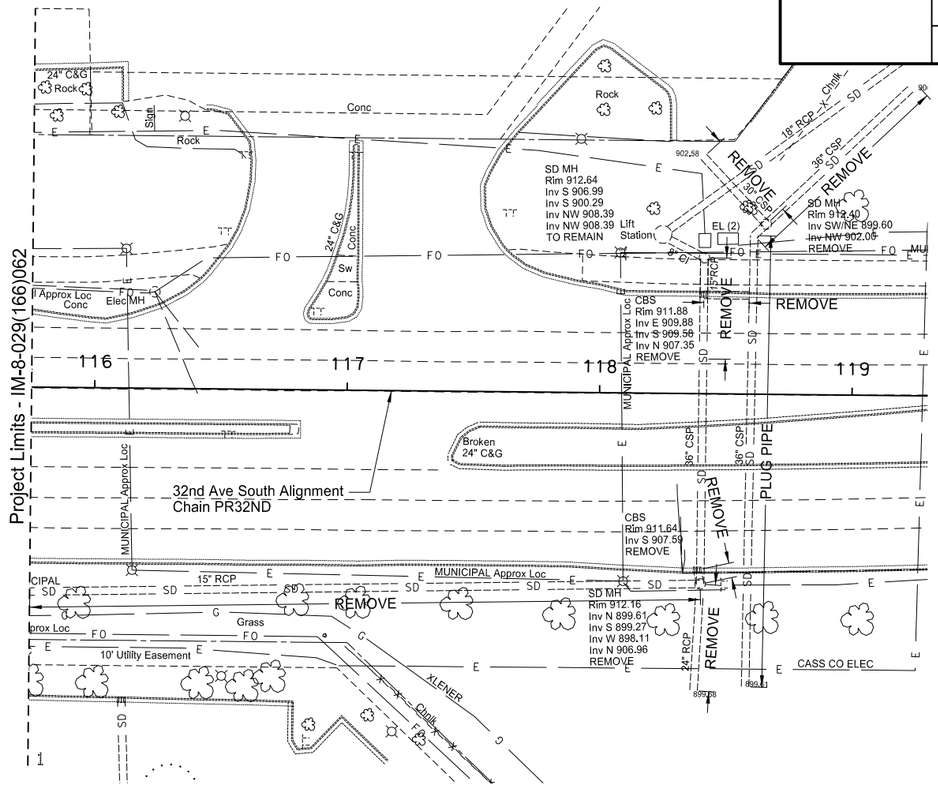
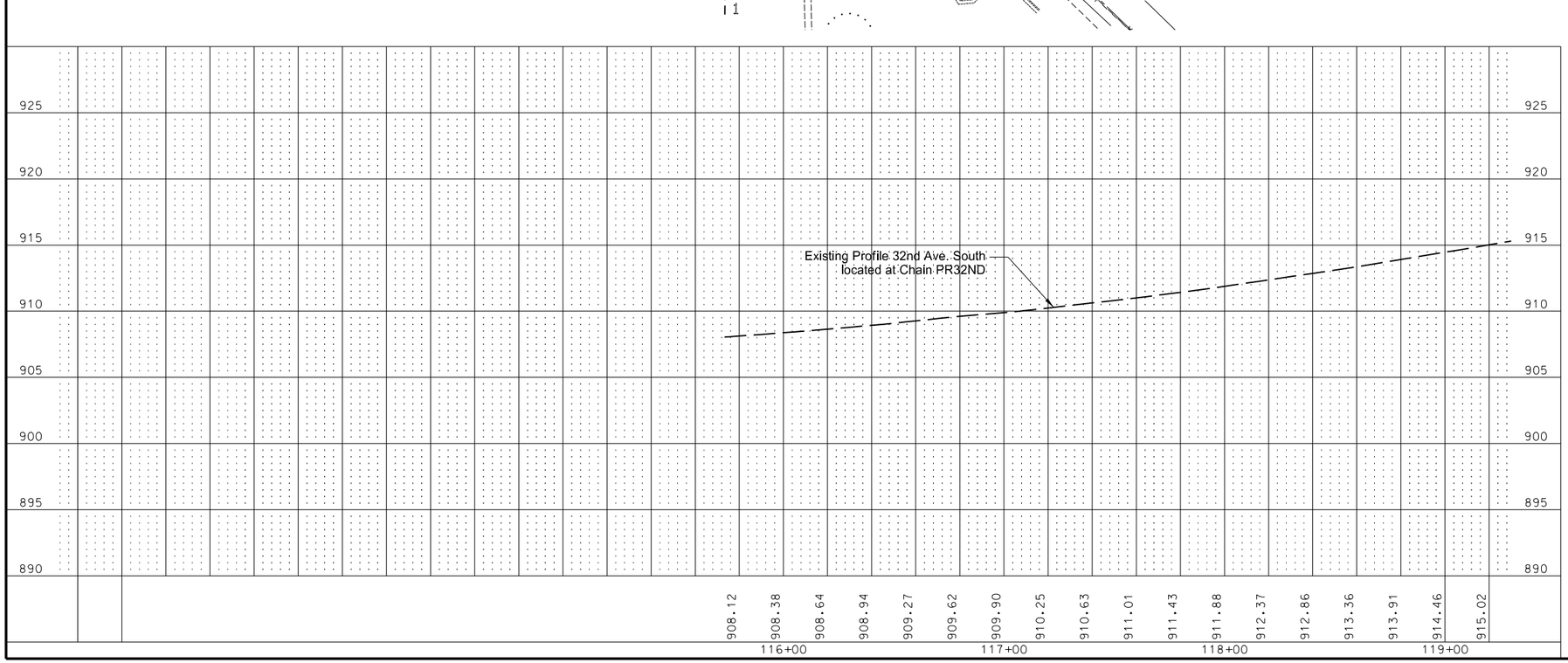
Storm Sewer Plan & Profile

32nd Avenue South

Sta 155+00 to 157+72

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	11





SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 115+75 - 81.1' Rt to 118+40 - 70.9' Rt	266	LF
		Sta 118+40 - 70.9' Rt to 118+41 - 75.5' Rt	5	LF
		Sta 118+41 - 75.5' Rt to 118+38 - 117.7' Rt	42	LF
		54 to Sta 118+41 - 11.0' Rt	40	LF
		Sta 118+41 - 39.0' Lt to 118+59 - 39.0' Lt	18	LF
		Sta 118+40 - 93.7' Lt to 118+65 - 67.3' Lt	36	LF
		Sta 118+65 - 67.3' Lt to 119+24 - 123.4' Lt	82	LF
202	210	REMOVAL OF MANHOLES		
		Sta 118+41 - 75.5' Rt	1	EA
		Sta 118+65 - 67.3' Lt	1	EA
202	230	REMOVAL OF INLETS		
		Sta 118+40 - 70.9' Rt	1	EA
		Sta 118+41 - 39.0' Lt	1	EA
714	9680	PLUG PIPE - ALL TYPES & SIZES		
		Sta 118+65 - 67.3' Lt to 118+59 - 116.0' Rt	1	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32ND

N

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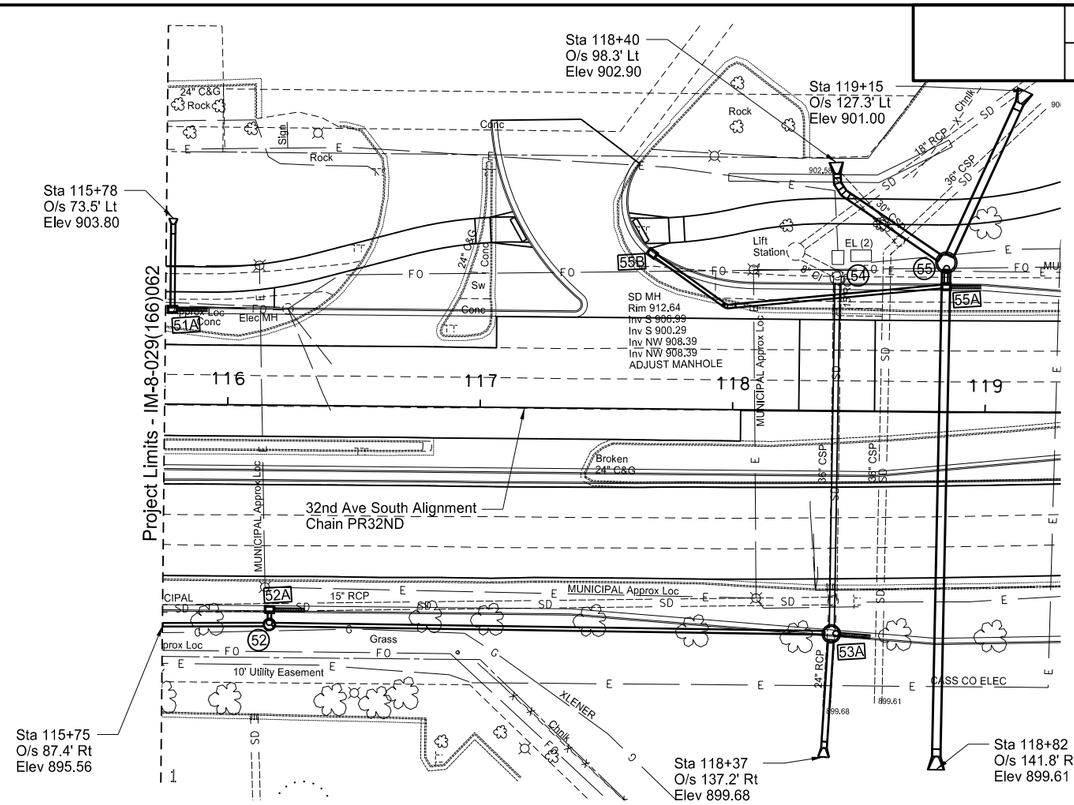
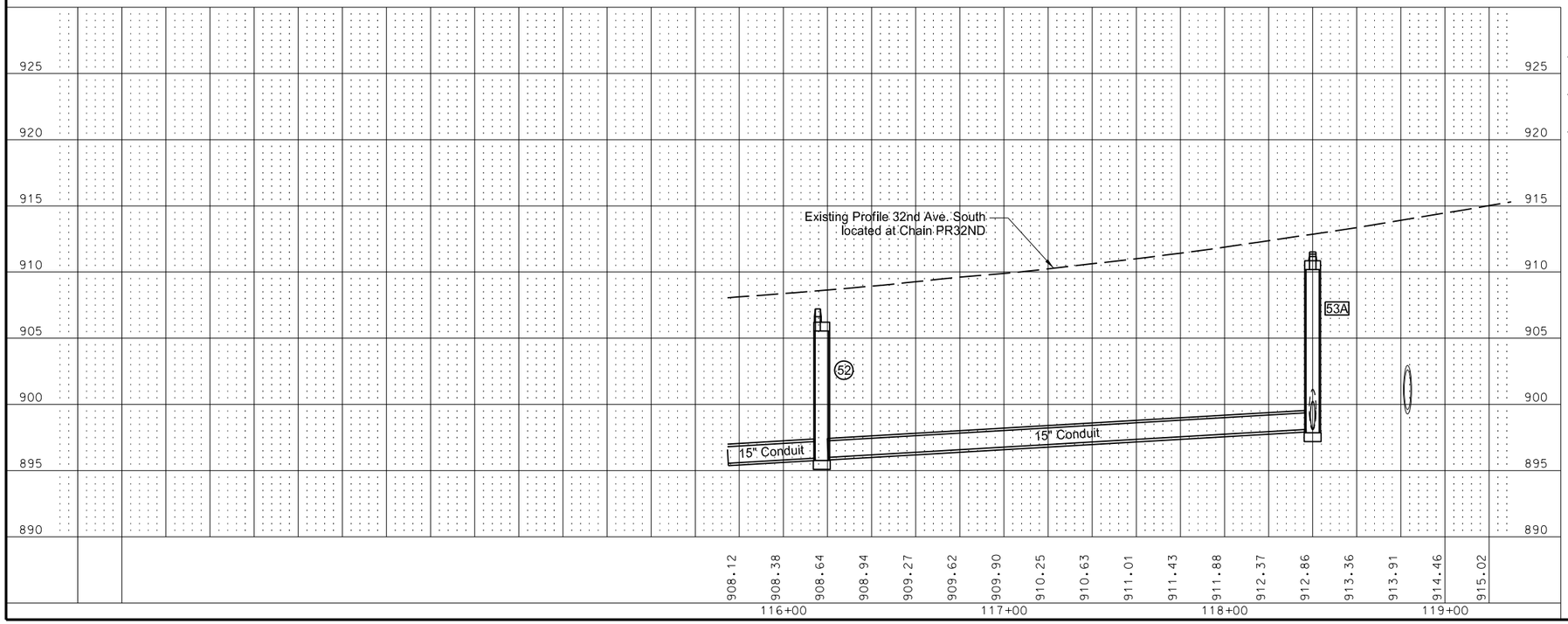
Plan & Profile

32nd Avenue South

Sta 115+75 to 119+20

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	12





SPEC	CODE	BID ITEM	QUANTITY	UNIT
714	4097	PIPE CONDUIT 15IN - STORM DRAIN		
		Sta 115+75 - 87.4' Rt to 52	40	LF
		52A to 52	4	LF
		52 to 53A	218	LF
		55B to 55A (includes bend section - 41° total deflection)	122	LF
		55A to 55	6	LF
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		51A to Sta 115+78 - 73.5' Lt	33	LF
714	4107	PIPE CONDUIT 24IN - STORM DRAIN		
		54 to Sta 118+41 - 11.0' Lt	40	LF
		Sta 118+41 - 11.0' Lt to 53A - Line & Grout	97	LF
		53A to Sta 118+37 - 137.2' Rt	43	LF
714	4112	PIPE CONDUIT 30IN - STORM DRAIN		
		Sta 118+40 - 98.3' Lt to 55 (includes bend section - 52.5° total deflection)	55	LF
714	4117	PIPE CONDUIT 36IN - STORM DRAIN		
		Sta 119+15 - 127.3' Lt to 55	67	LF
		Sta 118+82 - 99.7' Rt to 118+82 - 141.8' Rt	37	LF
714	4124	PIPE CONDUIT 36IN - JACKED OR BORED		
		55 to Sta 118+82 (99.7' Rt)	156	LF
722	0120	MANHOLE 72IN		
		52	1	EA
722	0130	MANHOLE 84IN		
		55	1	EA
722	3510	INLET - TYPE 2		
		51A	1	EA
		52A	1	EA
		55A	1	EA
		55B	1	EA
722	3766	INLET SPECIAL - TYPE 2 72IN		
		53A	1	EA
722	3910	INLET SLOTTED DRAIN 15IN		
		51A	10	LF
		52A	10	LF
		53A	10	LF
		55A	10	LF
722	6201	ADJUST MANHOLE SPECIAL		
		54	1	EA
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 115+75 to 119+20	5	EA
806	300	GROUT		
		Sta 118+41 - 11.0' Lt to 53A	360	CF

Notes:

Stations & Offsets this sheet listed from Chain PR32ND

N

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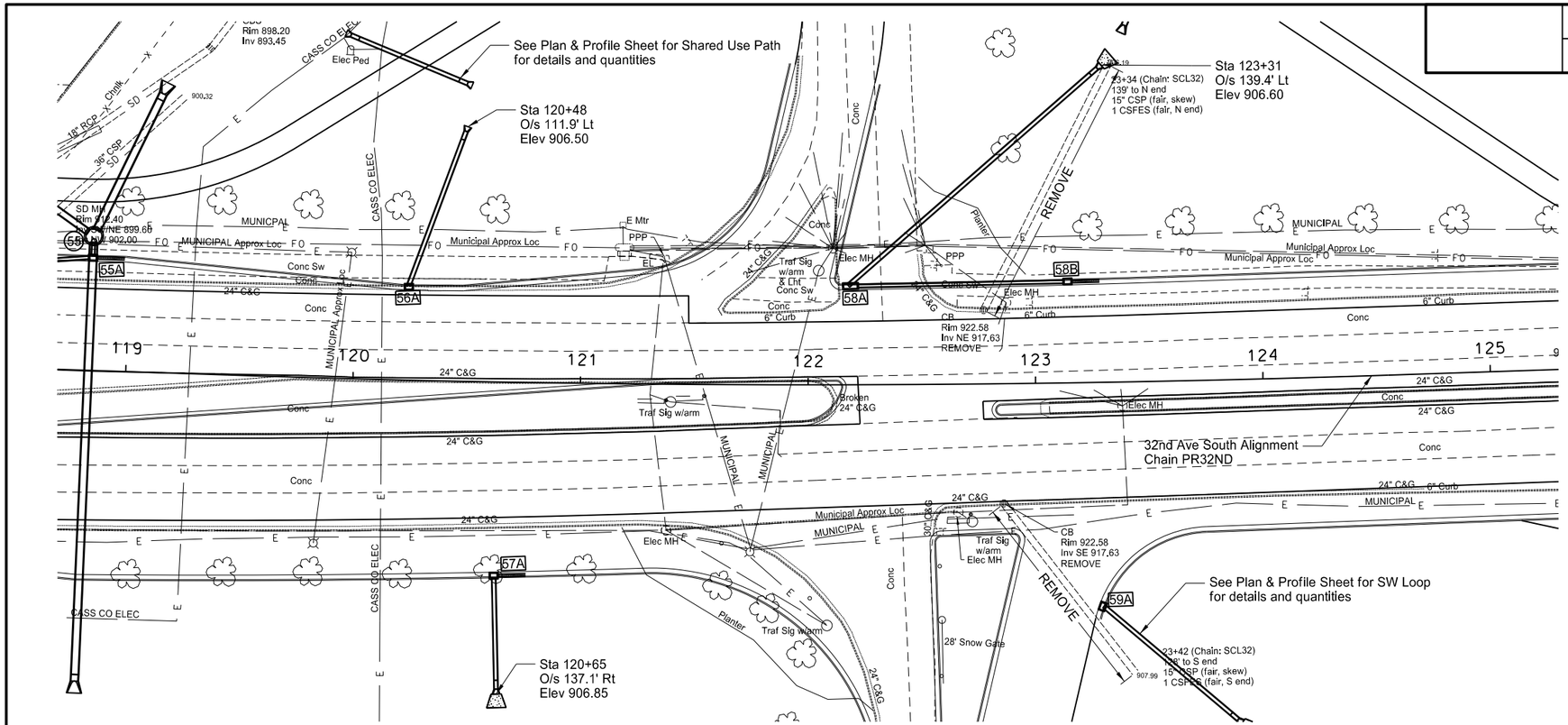
Plan & Profile

32nd Avenue South

Sta 115+75 to 119+20

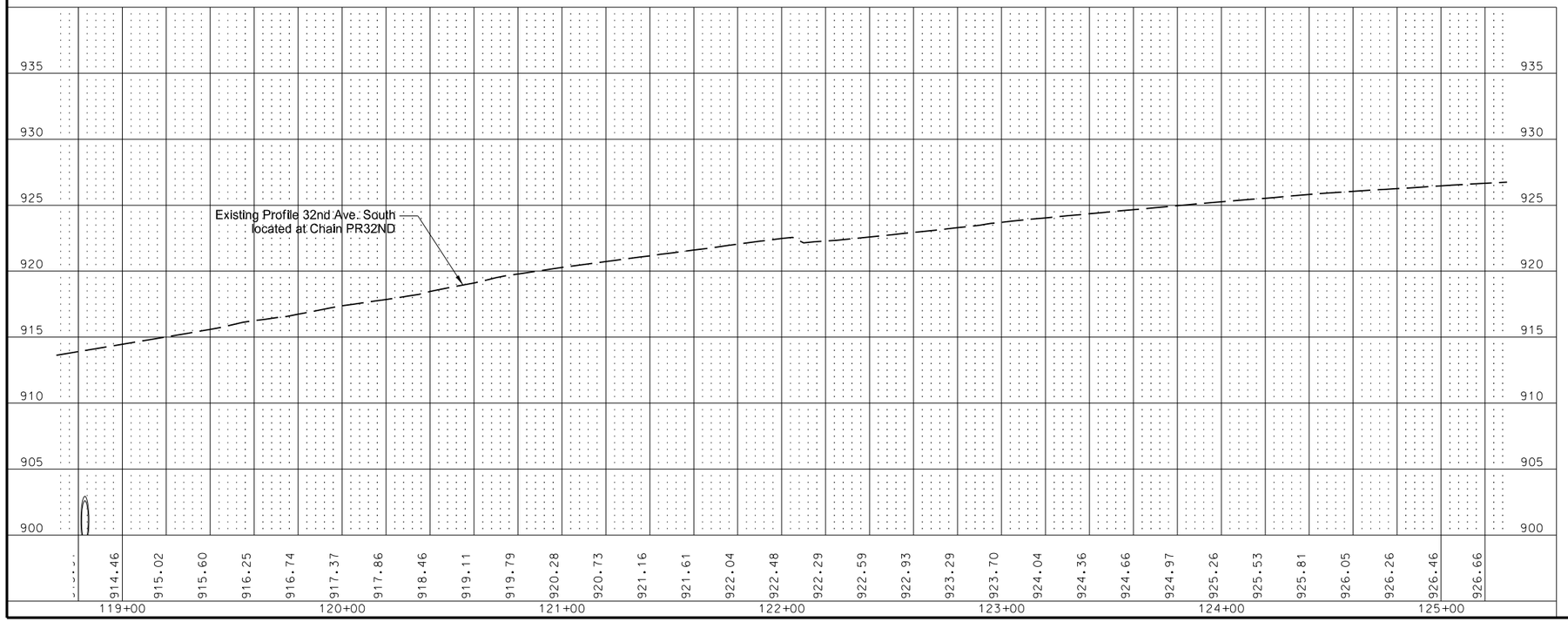
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	13



SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 122+86 - 52.7' Rt to 123+42 - 127.8' Rt	94	LF
		Sta 122+78 - 32.3' Lt to 123+34 - 139.4' Lt	121	LF
202	230	REMOVAL OF INLETS		
		Sta 122+86 - 52.7' Rt	1	EA
		Sta 122+78 - 32.3' Lt	1	EA
714	4097	PIPE CONDUIT 15IN - STORM DRAIN		
		58A to 58B	92	LF
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		56A to Sta 120+48 - 111.9' Lt	72	LF
		57A to Sta 120+65 - 137.1' Rt	49	LF
		58A to Sta 123+31 - 139.4' Lt	145	LF
722	3510	INLET - TYPE 2		
		56A	1	EA
		57A	1	EA
		58B	1	EA
722	3520	INLET - TYPE 2 DOUBLE		
		58A	1	EA
722	3910	INLET SLOTTED DRAIN 15IN		
		57A	10	LF
		58B	10	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 119+20 to 125+00	3	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32ND



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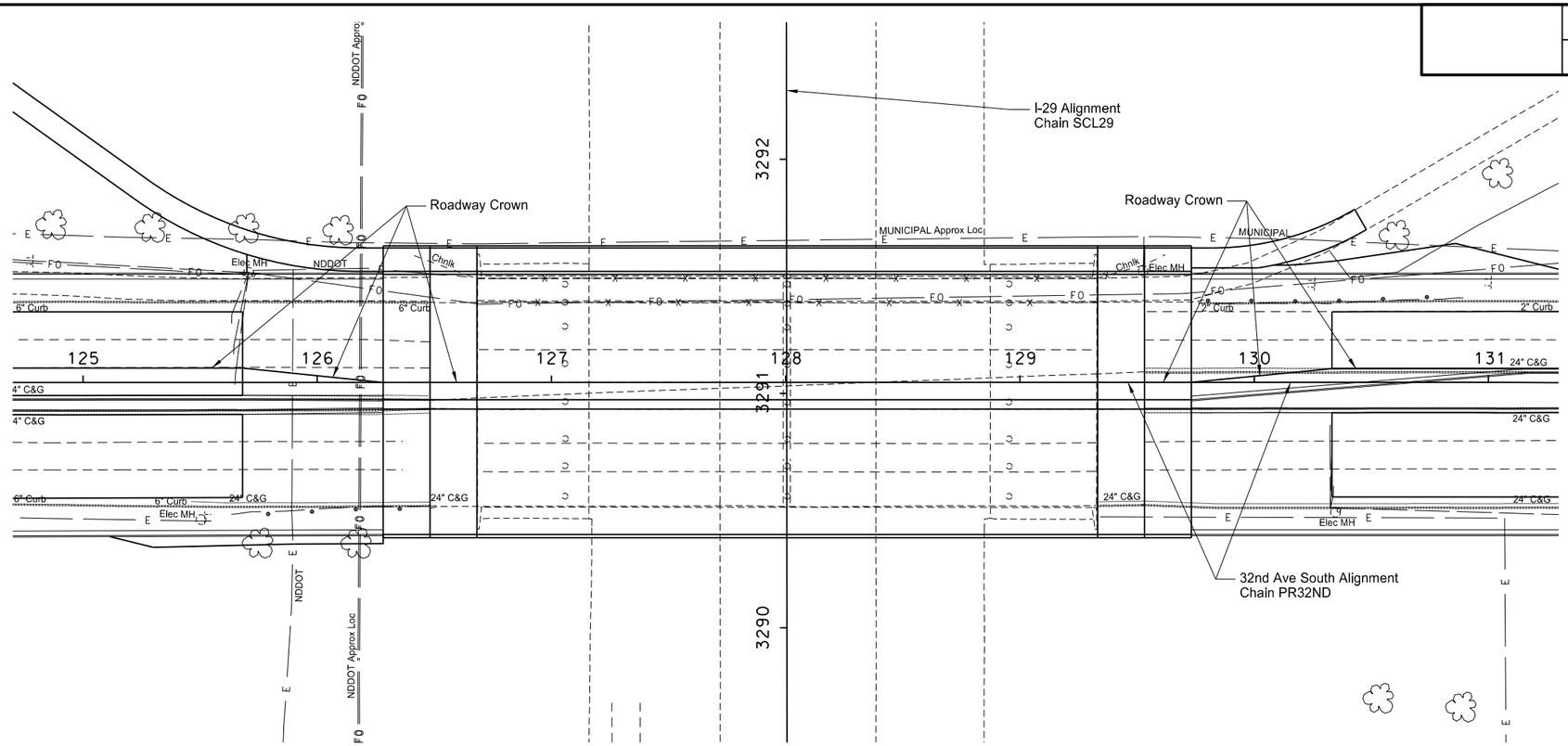
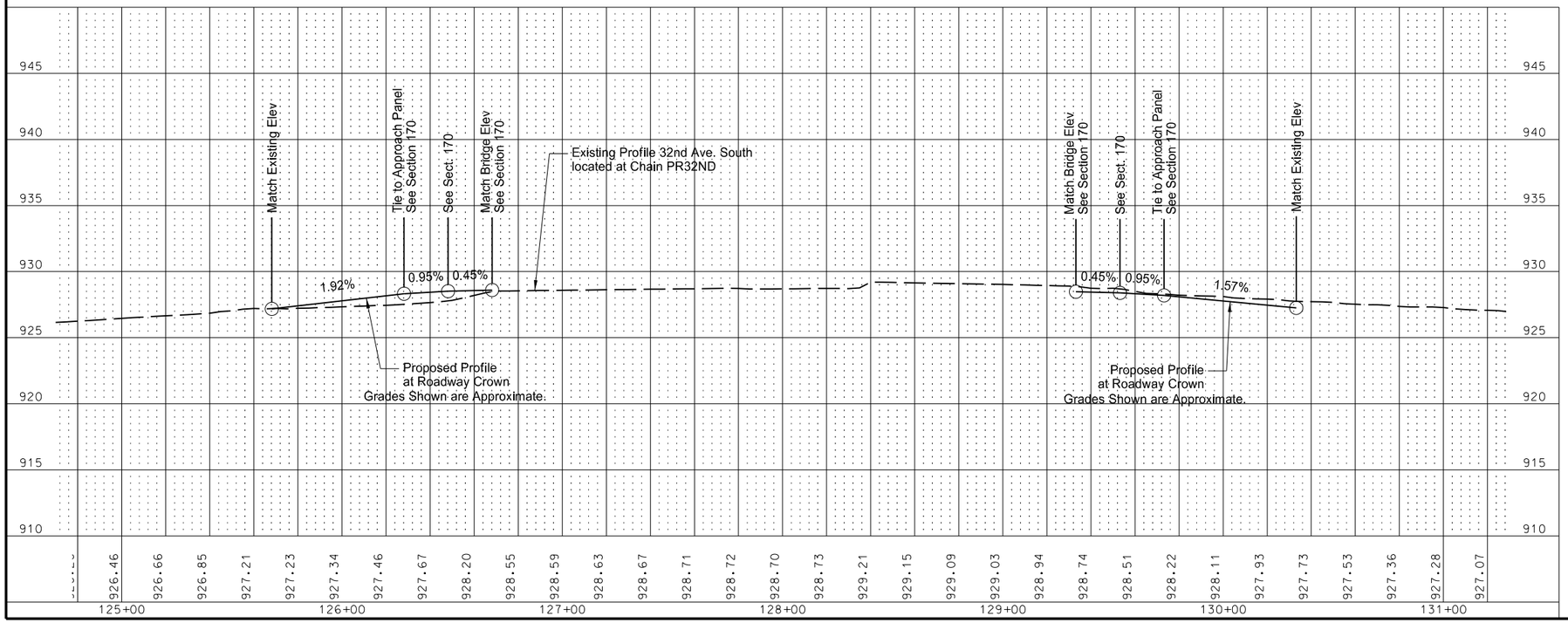
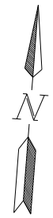
32nd Avenue South

Sta 119+20 to 125+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	14







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Plan & Profile

32nd Avenue South

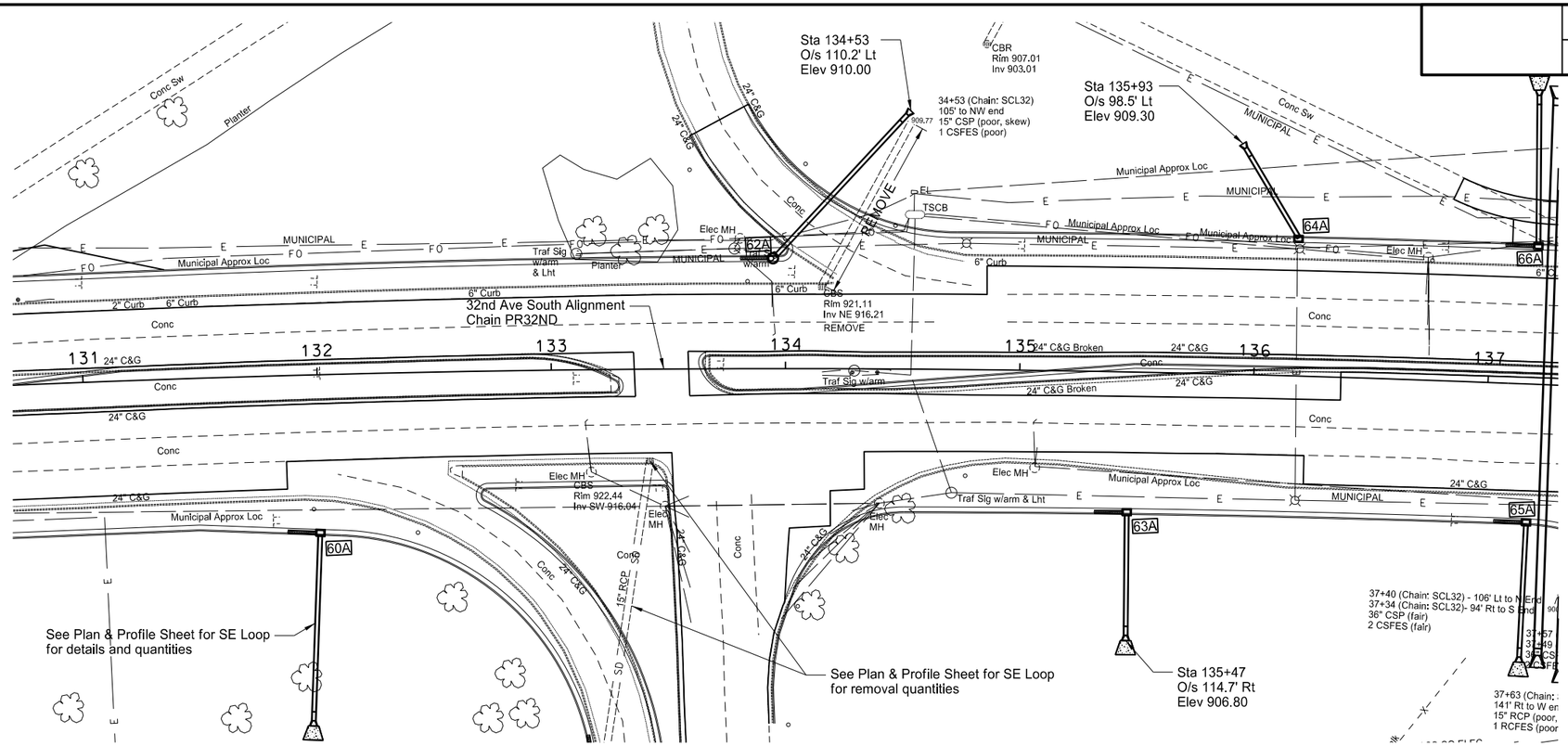
Sta 125+00 tp 131+00

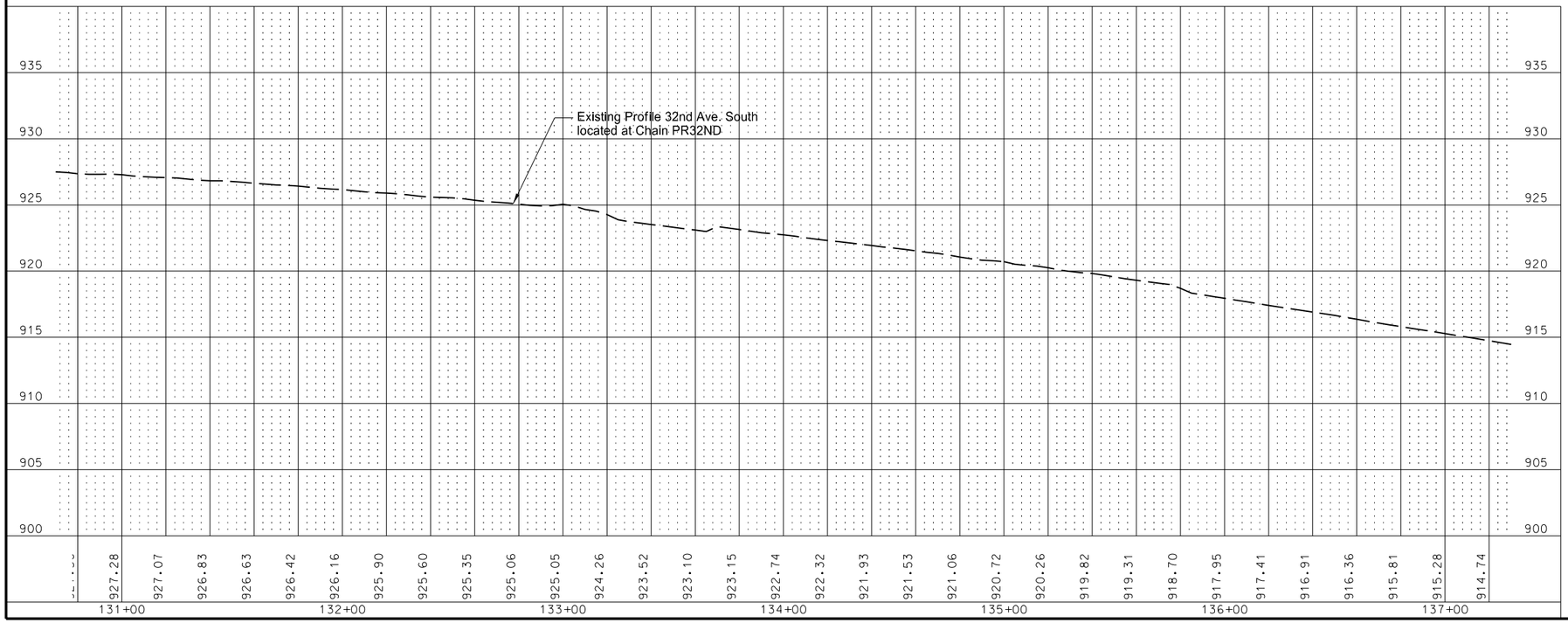
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	15

SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 134+16 - 34.7' Lt to 134+53 - 105.1' Lt	79	LF
202	230	REMOVAL OF INLETS		
		Sta 134+16 - 34.7' Lt	1	EA
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		62A to Sta 134+53 - 110.2' Lt	82	LF
		63A to Sta 135+47 - 114.7' Rt	52	LF
		Sta 135+93 - 98.5' Lt to Sta 64A	45	LF
722	3510	INLET - TYPE 2		
		63A	1	EA
		64A	1	EA
722	3701	INLET SPECIAL - TYPE 2 48IN		
		62A	1	EA
722	3910	INLET SLOTTED DRAIN 15IN		
		62A	10	LF
		63A	10	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 131+00 to 137+00	3	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32ND





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Plan & Profile

32nd Avenue South

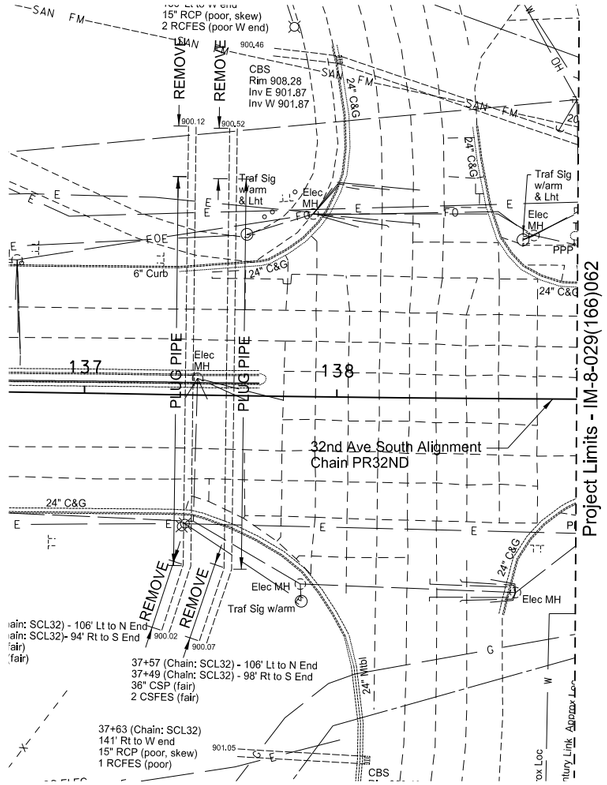
Sta 131+00 to 137+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	16

SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 137+41 - 106.4' Lt to 137+41 - 86.4' Lt	20	LF
		Sta 137+58 - 105.8' Lt to 137+58 - 85.8' Lt	20	LF
		Sta 137+41 - 67.6' Rt to 137+34 - 93.9' Rt	28	LF
		Sta 137+58 - 68.7' Rt to 137+49 - 97.9' Rt	31	LF
714	9680	PLUG PIPE - ALL TYPES & SIZES		
		Sta 118+65 - 67.3' Lt to 118+59 - 116.0' Rt	1	EA
		Sta 118+65 - 67.3' Lt to 118+59 - 116.0' Rt	1	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32ND



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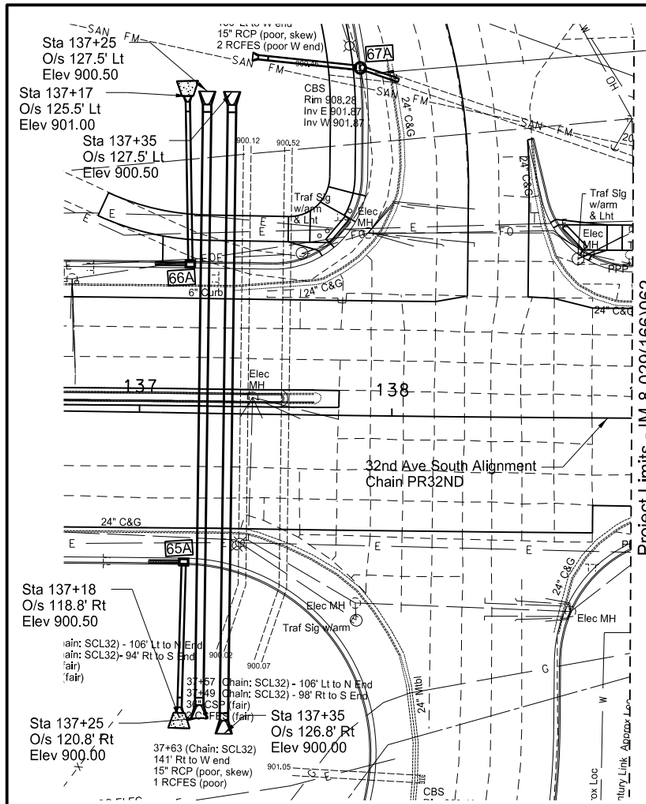
Plan & Profile

32nd Avenue South

Sta 137+00 to 138+95

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	17



See Plan & Profile Sheet for 36th St. for details, quantities and removals

SPEC	CODE	BID ITEM	QUANTITY	UNIT
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		65A to Sta 137+18 - 118.8' Rt	58	LF
		66A to Sta 137+17 - 125.5' Lt	64	LF
714	4117	PIPE CONDUIT 36IN - STORM DRAIN		
		Sta 137+25 - 127.5' Lt to 137+25 - 97.4' Lt	25	LF
		Sta 137+25 - 76.6' Rt to 137+25 - 120.8' Rt	39	LF
		Sta 137+35 - 127.5' Lt to 137+35 - 97.4' Lt	25	LF
		Sta 137+35 - 76.6' Rt to 137+35 - 126.8' Rt	45	LF
714	4124	PIPE CONDUIT 36IN - JACKED OR BORED		
		Sta 137+25 - 97.4' Lt to 137+25 - 76.6' Rt	174	LF
		Sta 137+35 - 97.4' Lt to 137+35 - 76.6' Rt	174	LF
722	3510	INLET - TYPE 2		
		65A	1	EA
		66A	1	EA
722	3910	INLET SLOTTED DRAIN 15IN		
		65A	10	LF
		66A	10	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 137+00 to 138+95	6	EA

Notes:

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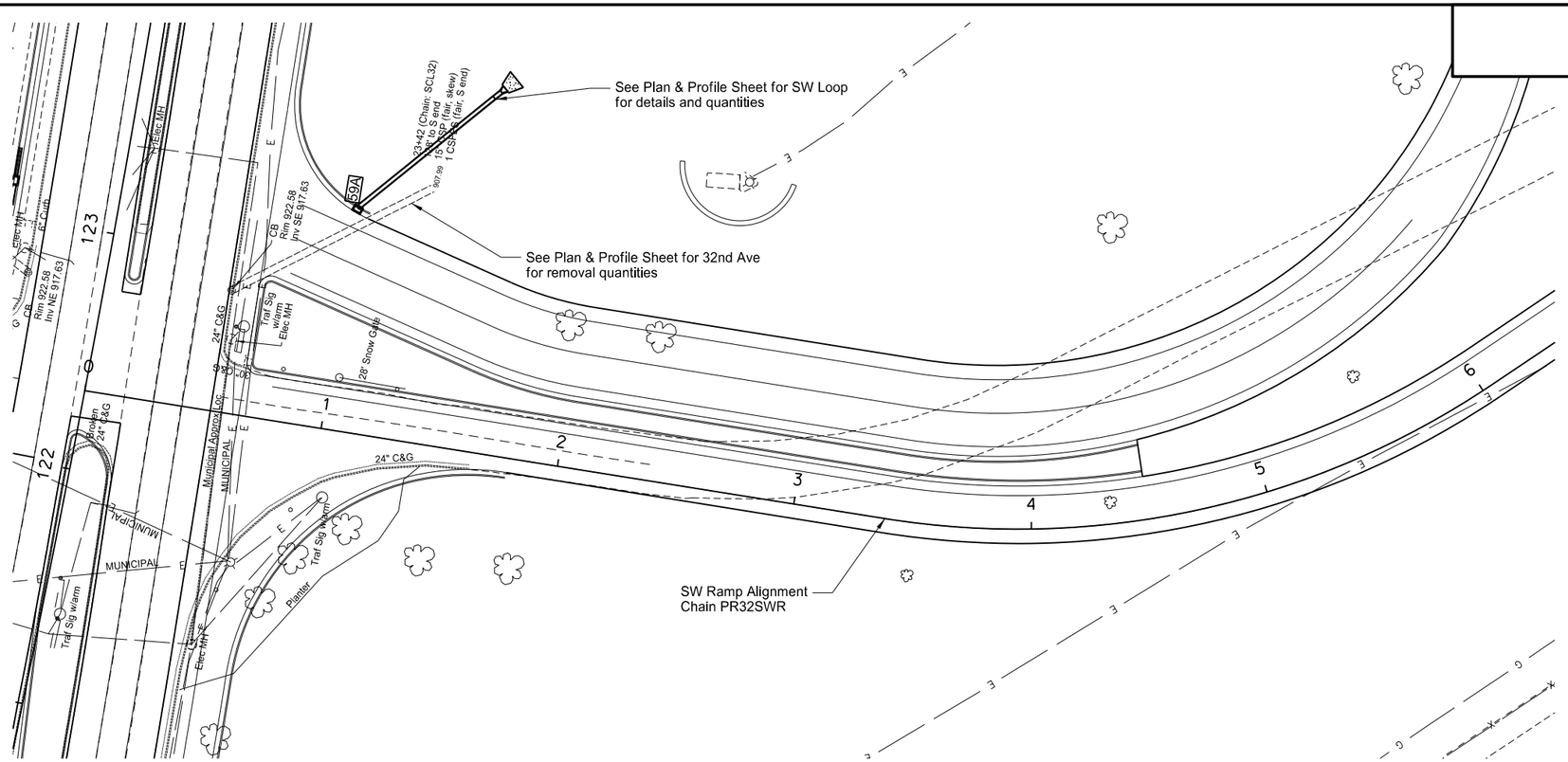
Plan & Profile

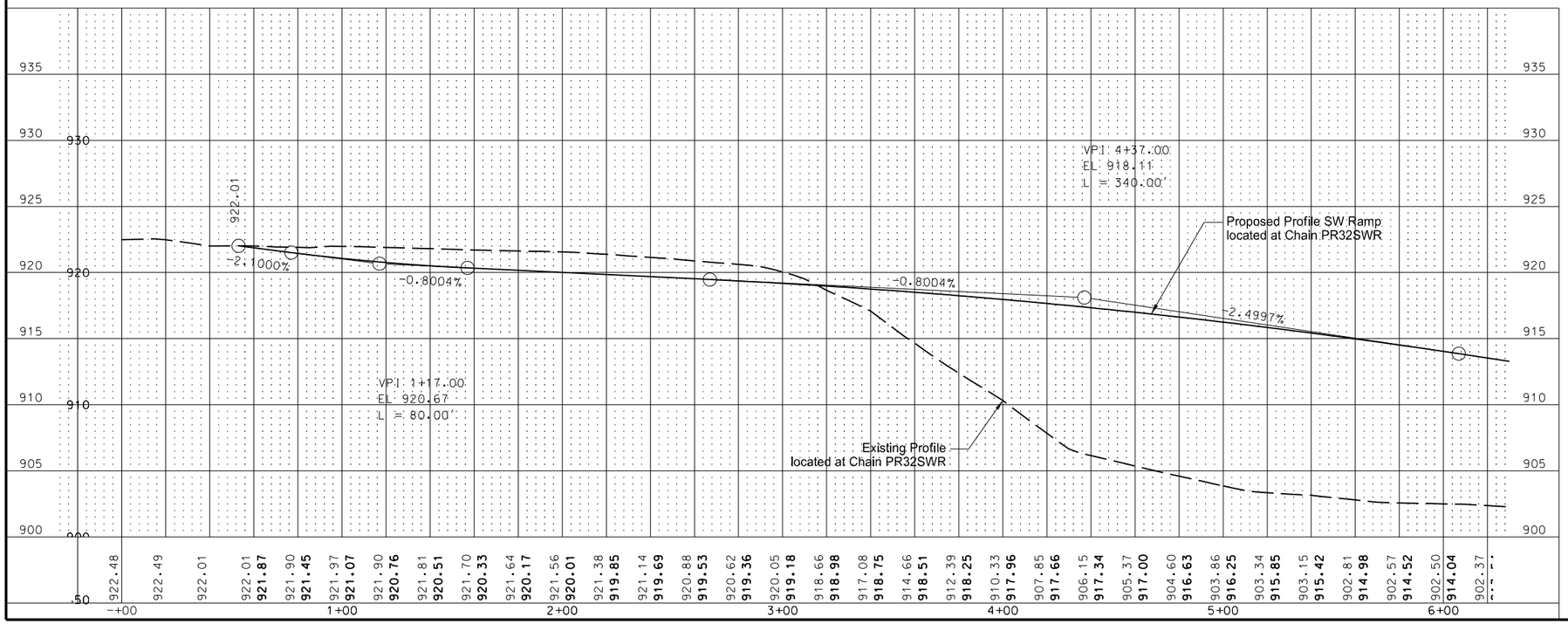
32nd Avenue South

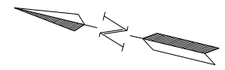
Sta 137+00 to 138+95

11/16/2016 8:09:13 AM jrensch R:\project\80029062.166\design\Sheets\060PP_007.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	18







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Plan & Profile

SW Ramp

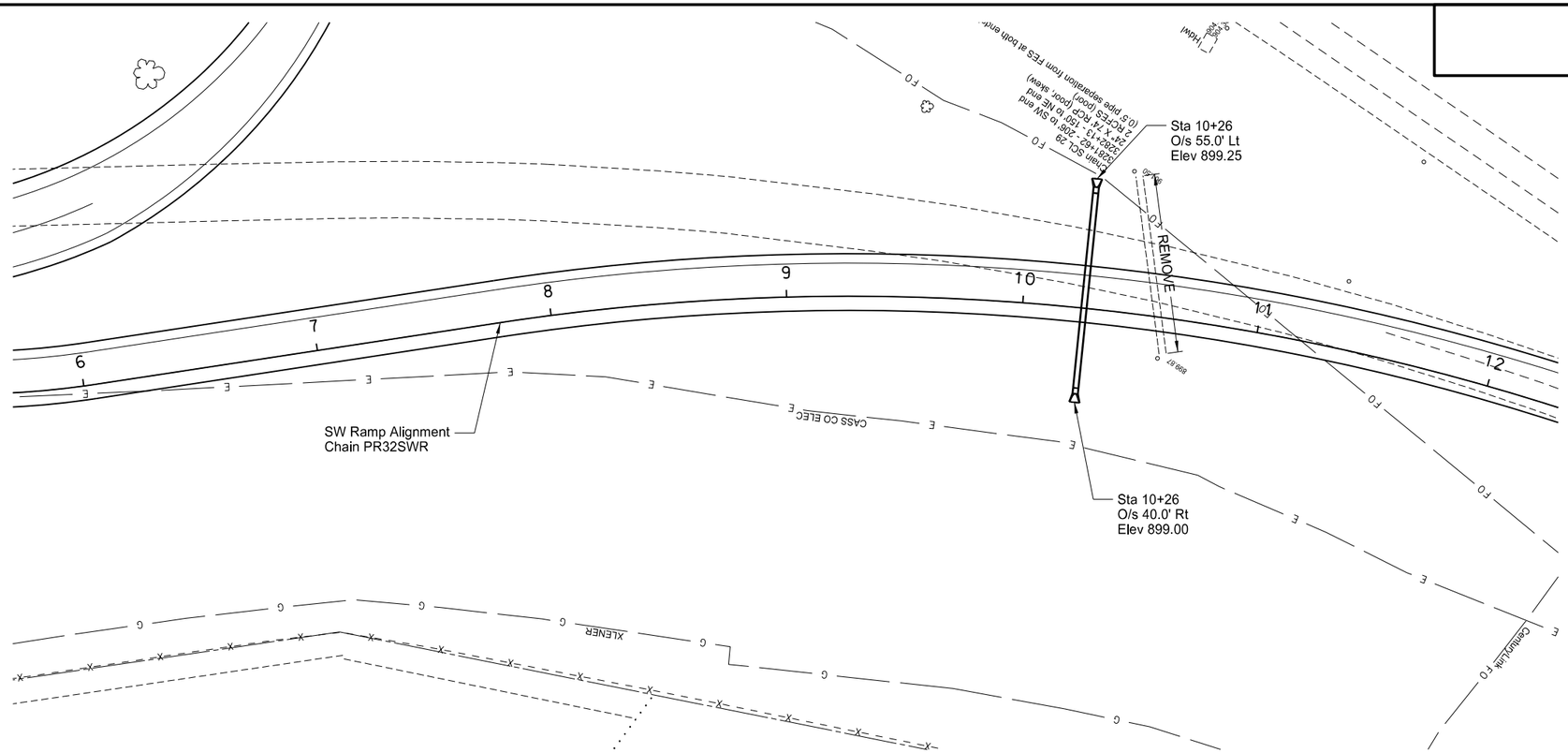
Sta 0+77.10 to 6+00

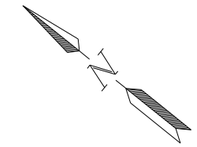
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	19

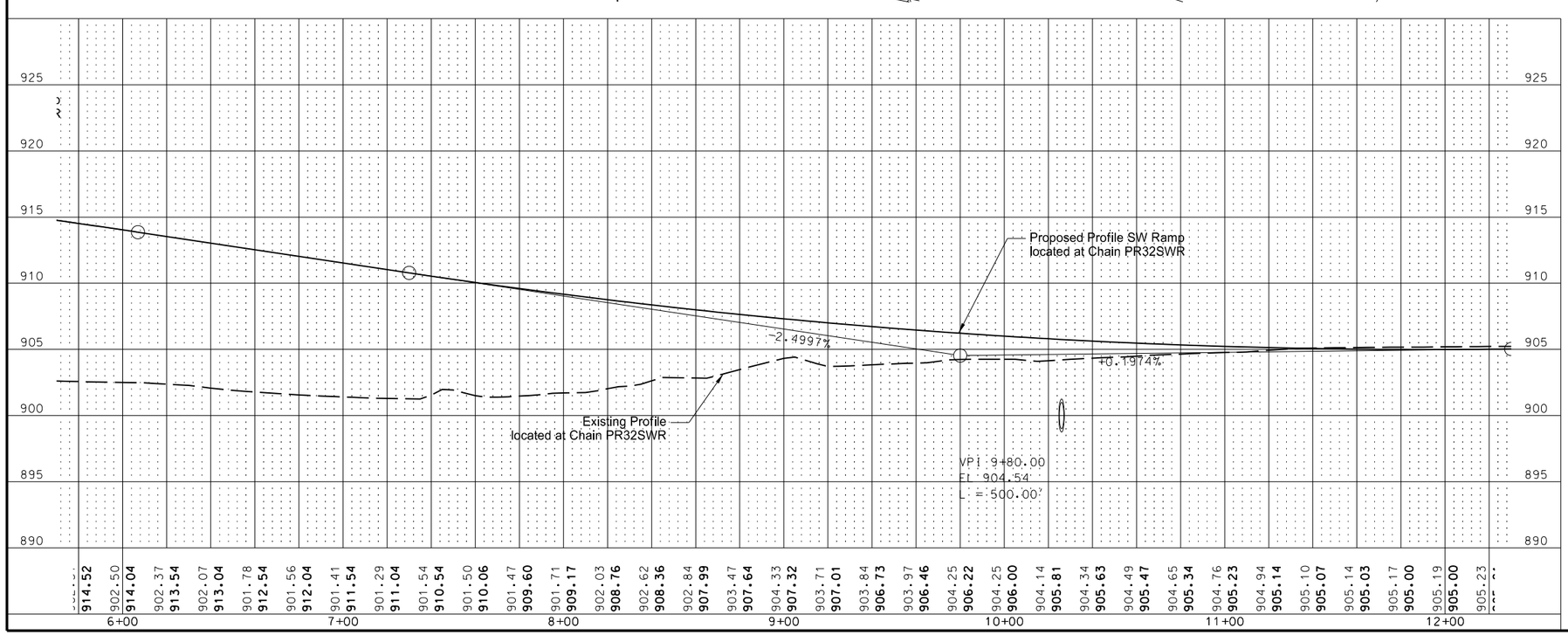
SPEC CODE		BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 10+43 - 58.0' Lt to 10+62 - 15.2' Rt	76	LF
714	4107	PIPE CONDUIT 24IN - STORM DRAIN		
		Sta 10+26 - 55.0' Lt to 10+26 - 40.0' Rt	88	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 10+26	2	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32SWR







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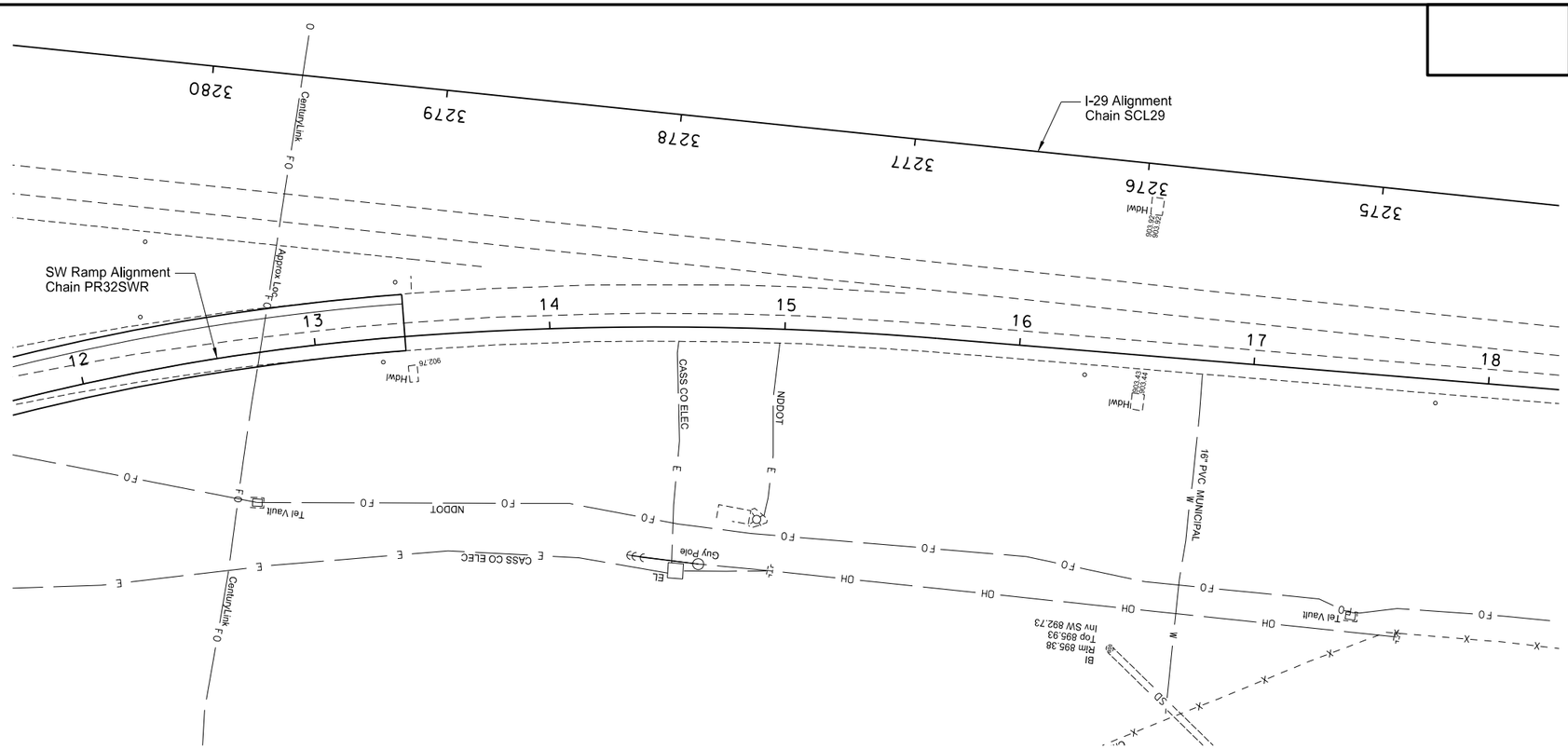
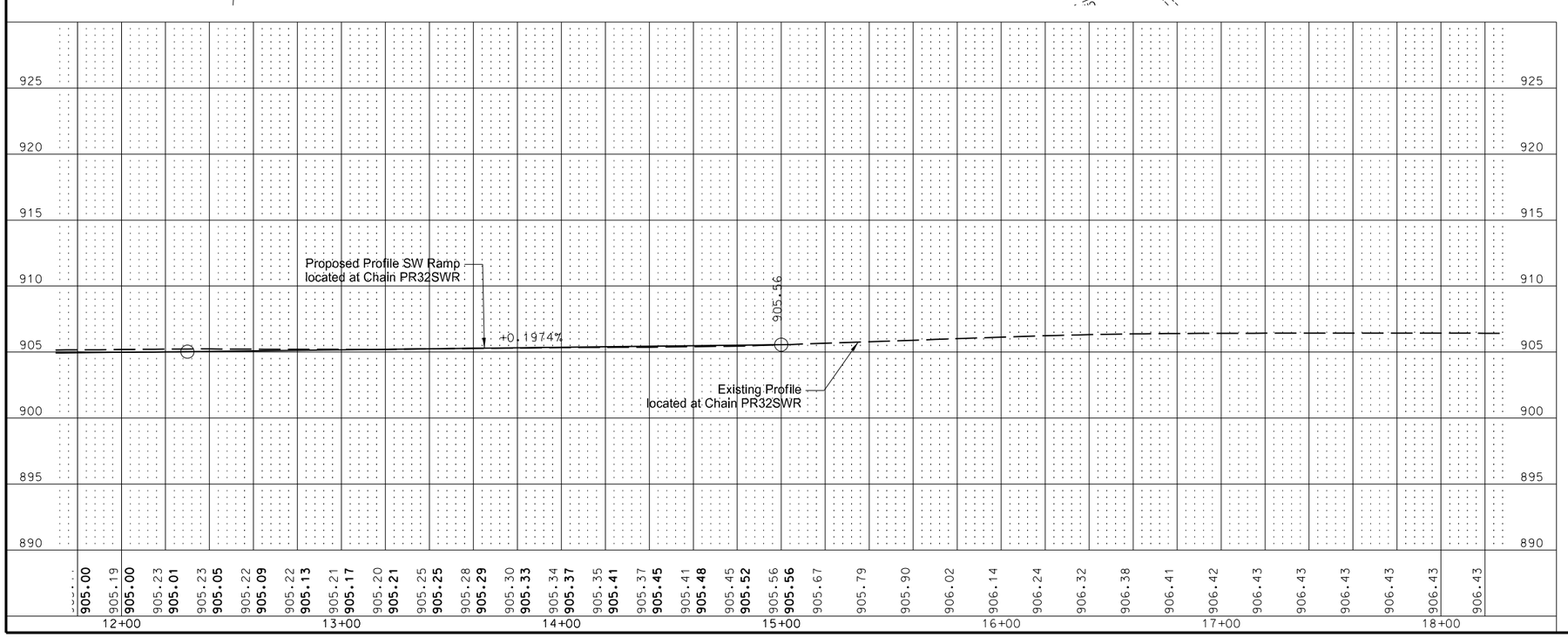
Plan & Profile

SW Ramp

Sta 6+00 to 12+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	20





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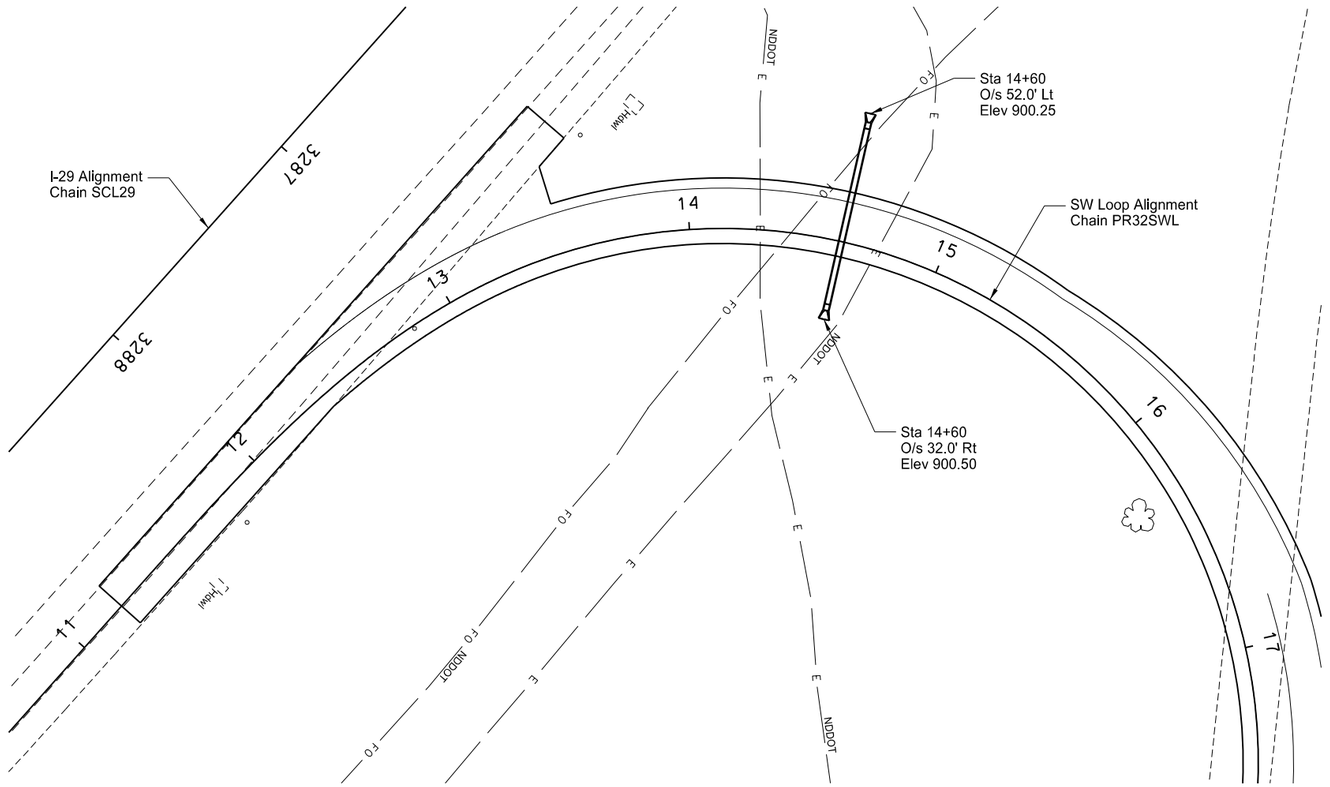
Plan & Profile

SW Ramp

Sta 12+00 to 13+38.30

11/16/2016 8:09:17 AM jrensch R:\project\80029062.166\design\Sheets\060PP_010.dgn

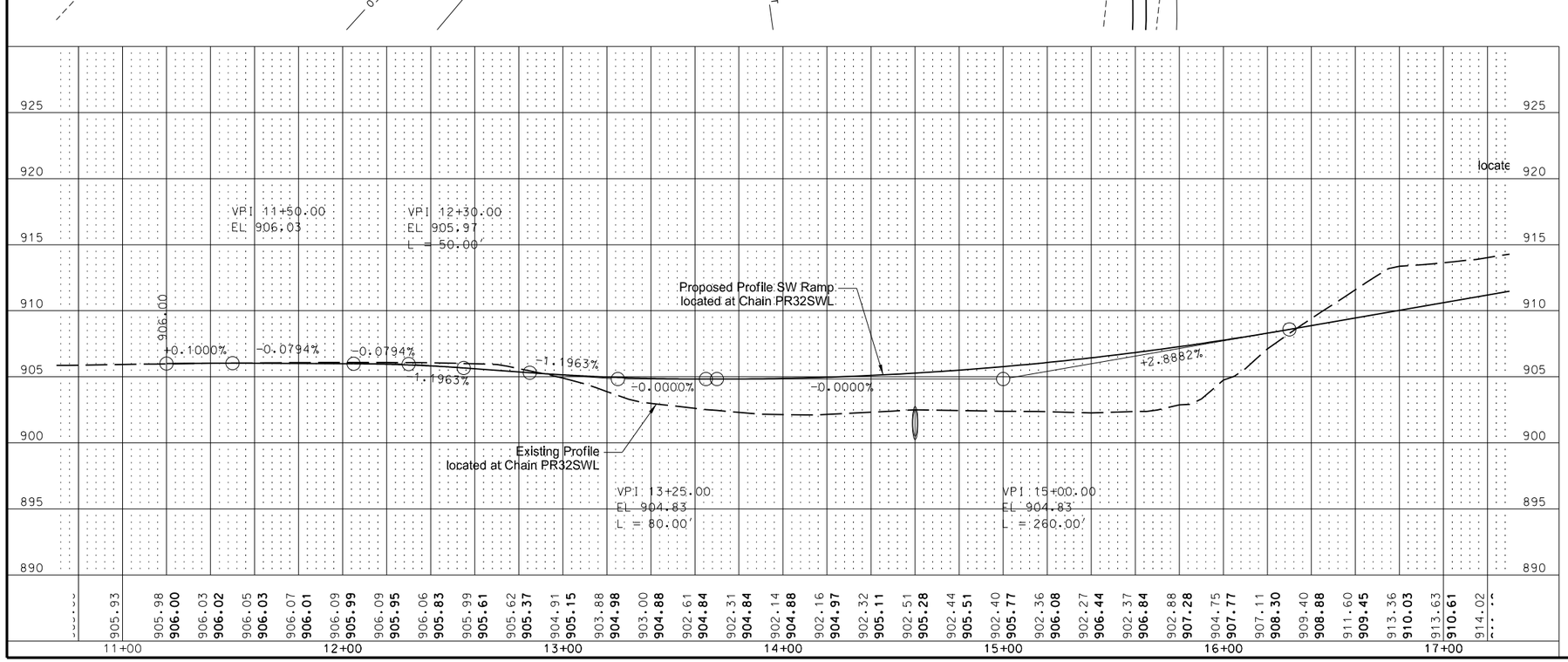
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	21

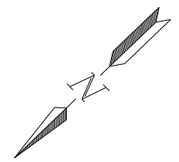


SPEC	CODE	BID ITEM	QUANTITY	UNIT
714	4107	PIPE CONDUIT 24IN - STORM DRAIN		
		Sta 14+60 - 52.0' Lt to 14+60 - 32.0' Rt	77	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 14+60	2	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32SWL





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Plan & Profile

SW Loop

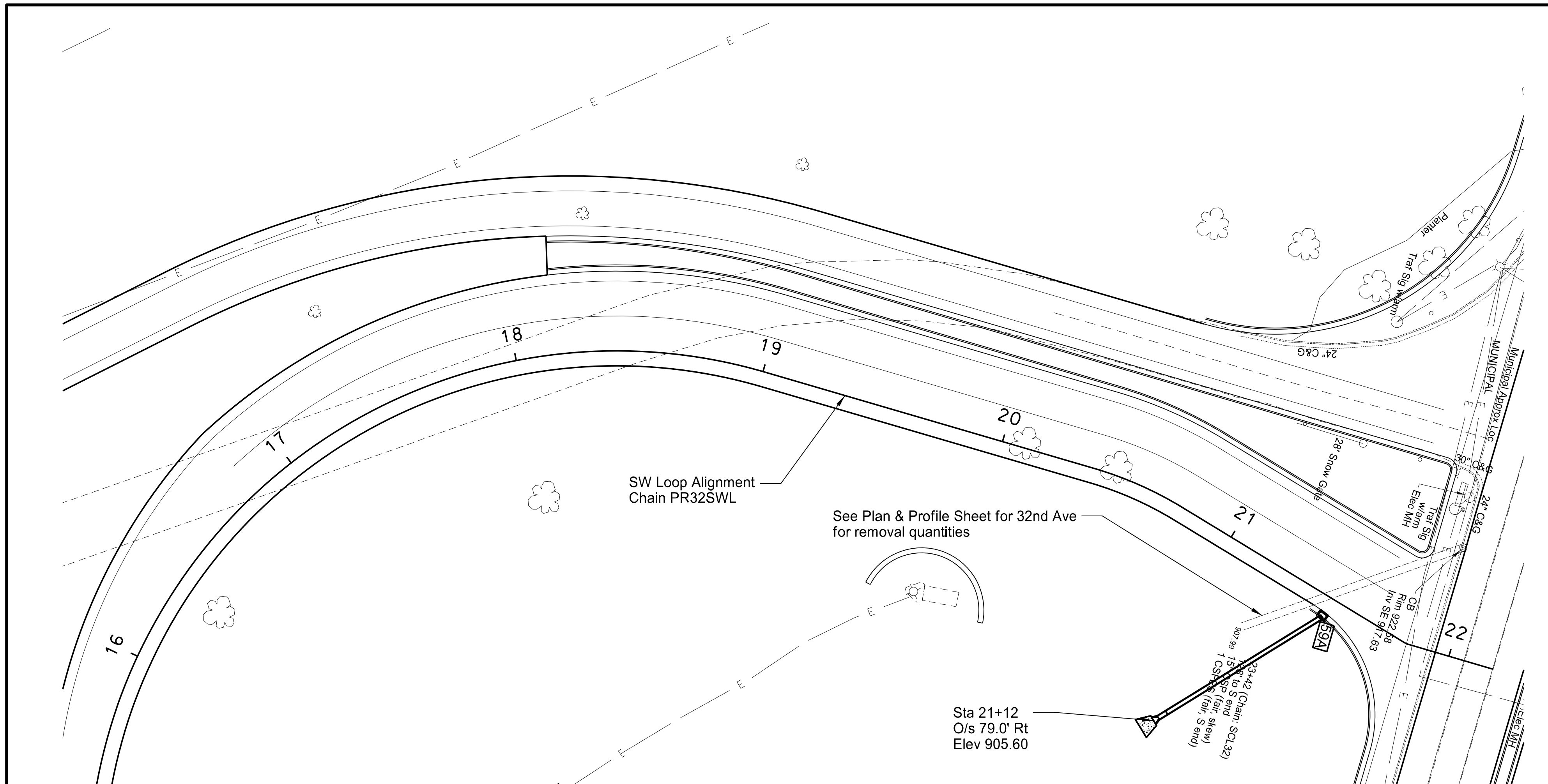
Sta 11+22.10 to 16+00

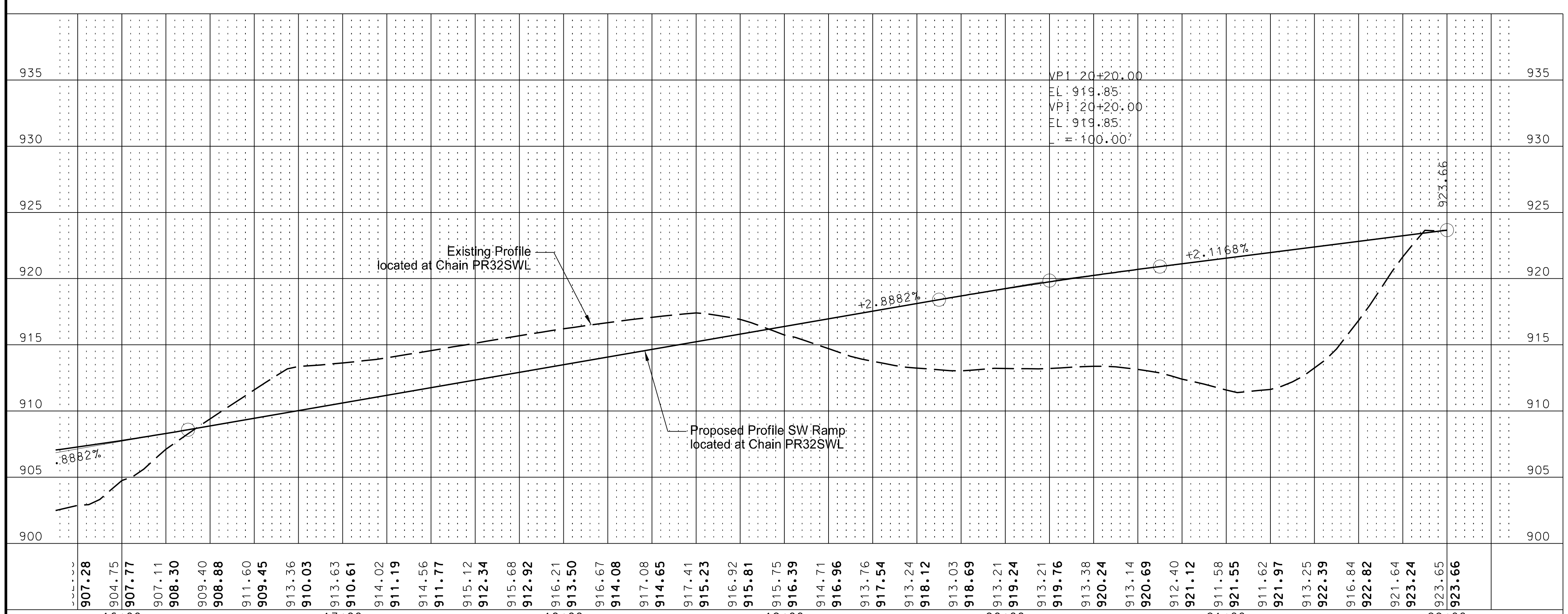
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	22

SPEC	CODE	BID ITEM	QUANTITY	UNIT
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		59A to Sta 21+12 - 79.0' Rt	77	LF
722	3510	INLET - TYPE 2		
		59A	1	EA
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 21+12	1	EA

Notes:

Stations & Offsets this sheet listed from Chain PR32SWL





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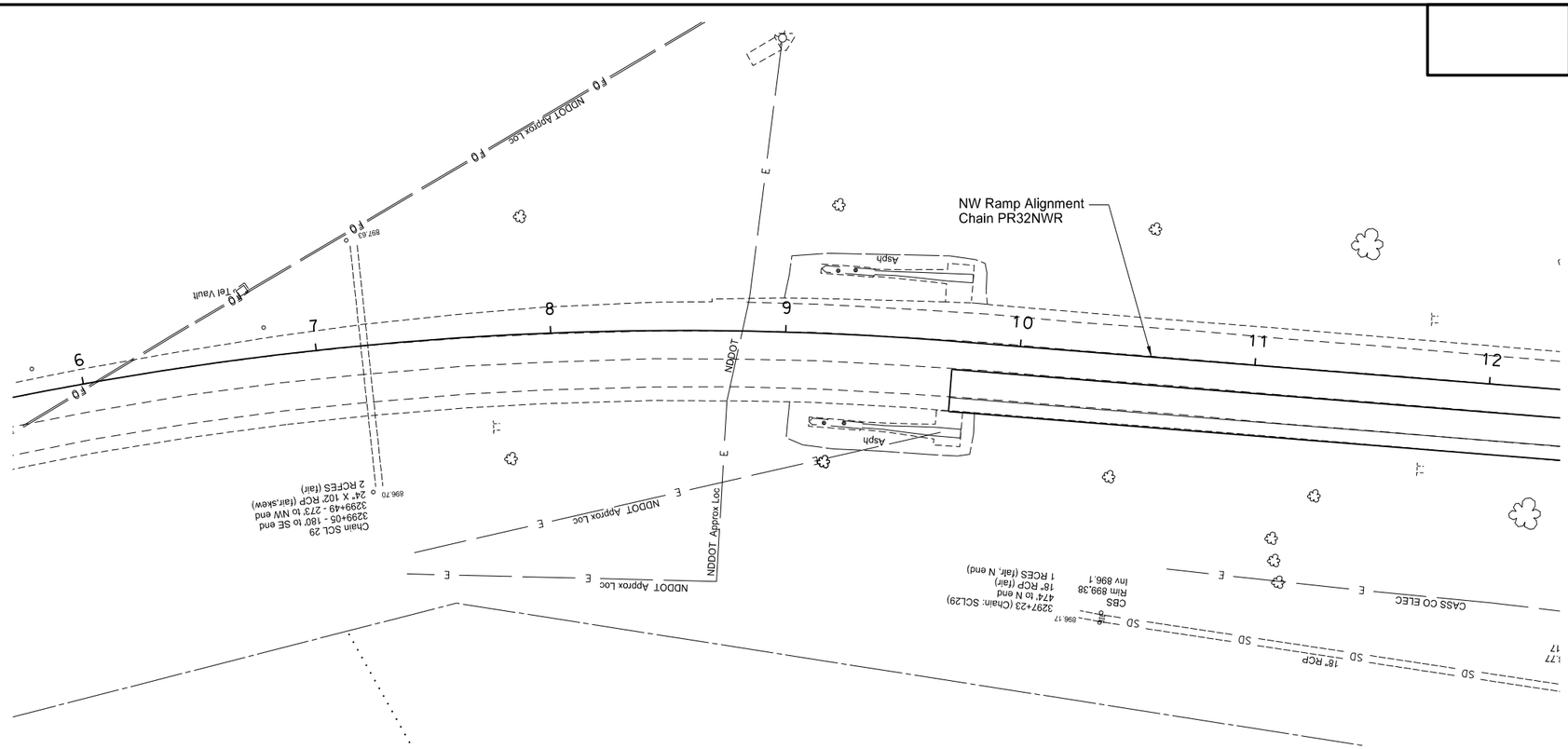
Plan & Profile

SW Loop

Sta 16+00 to 21+63.70

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	23

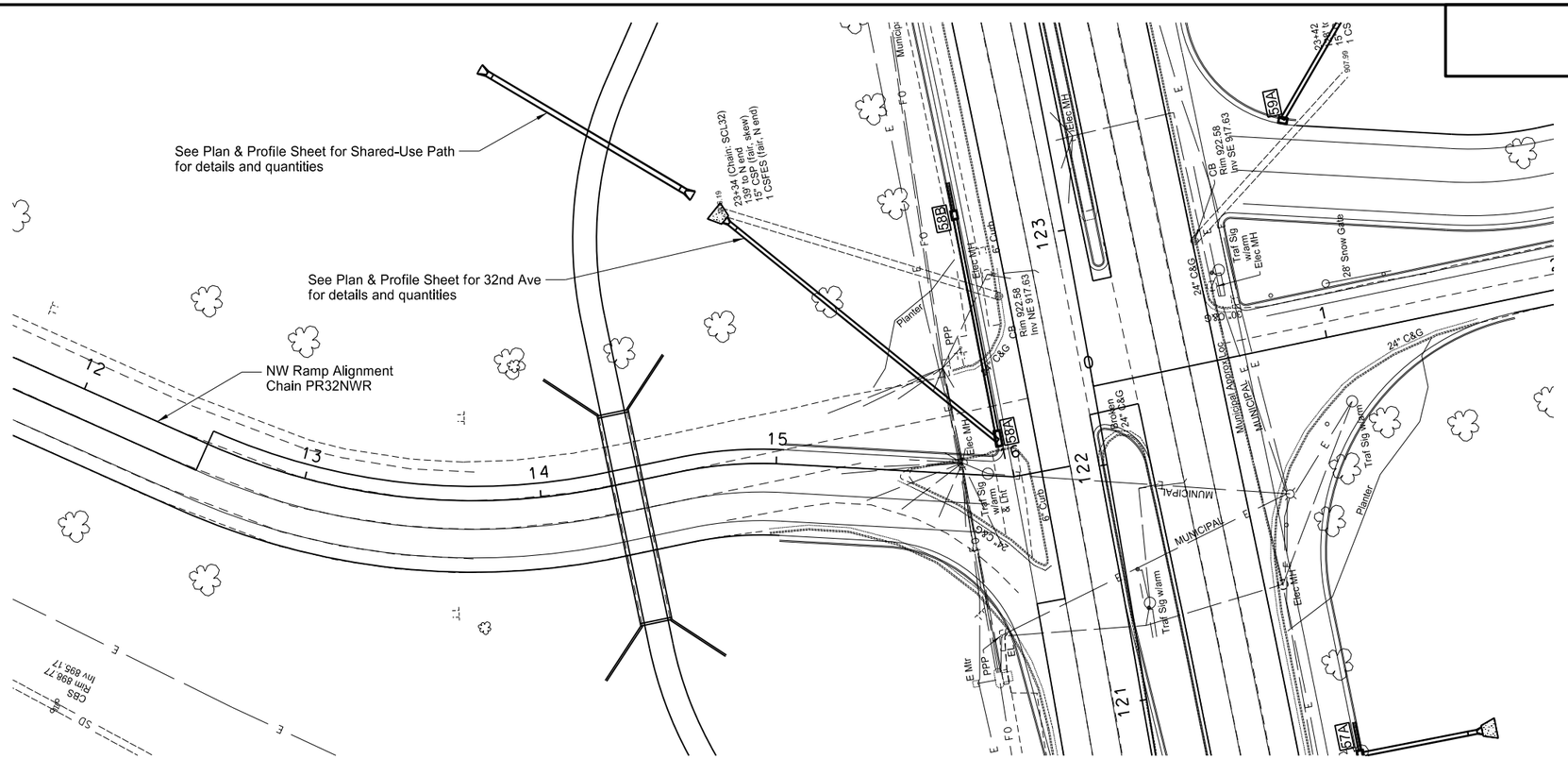


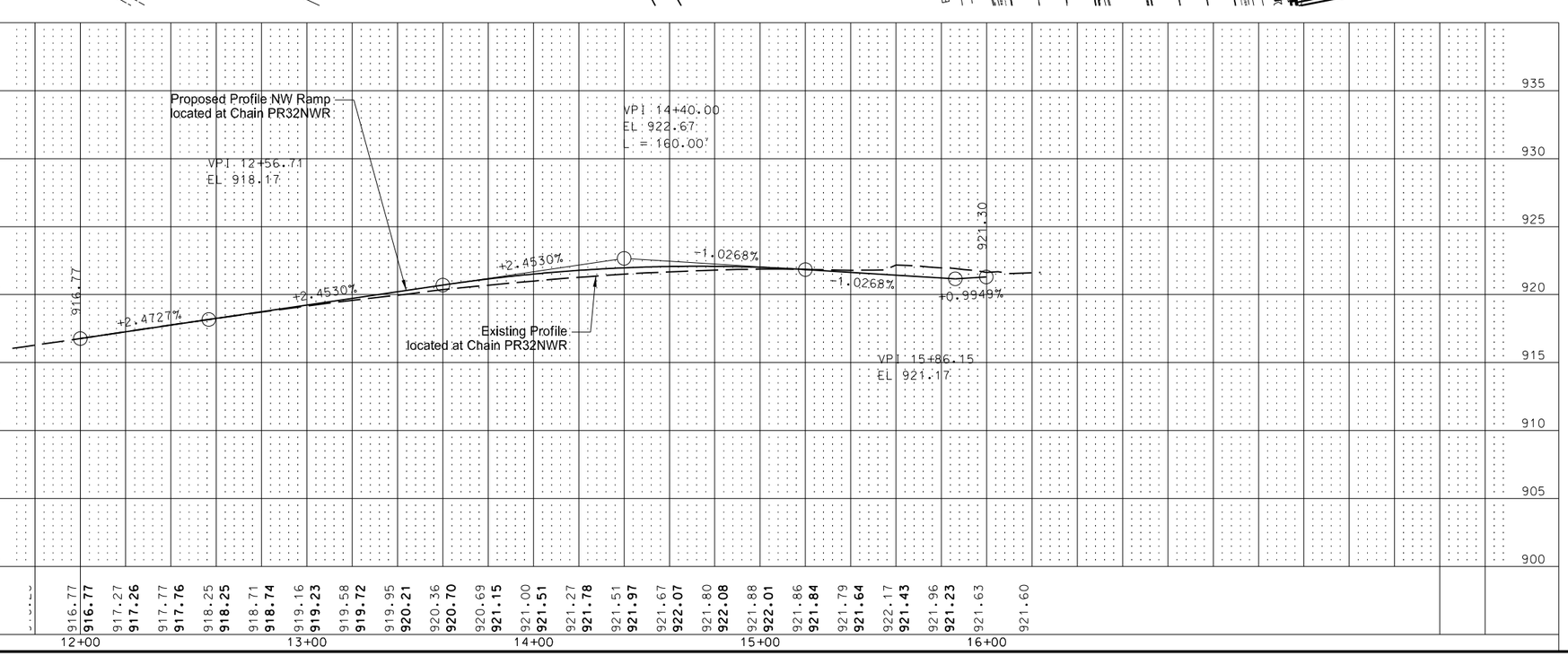
Plan & Profile

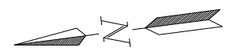
NW Ramp

Sta 9+71.70 to 12+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	24







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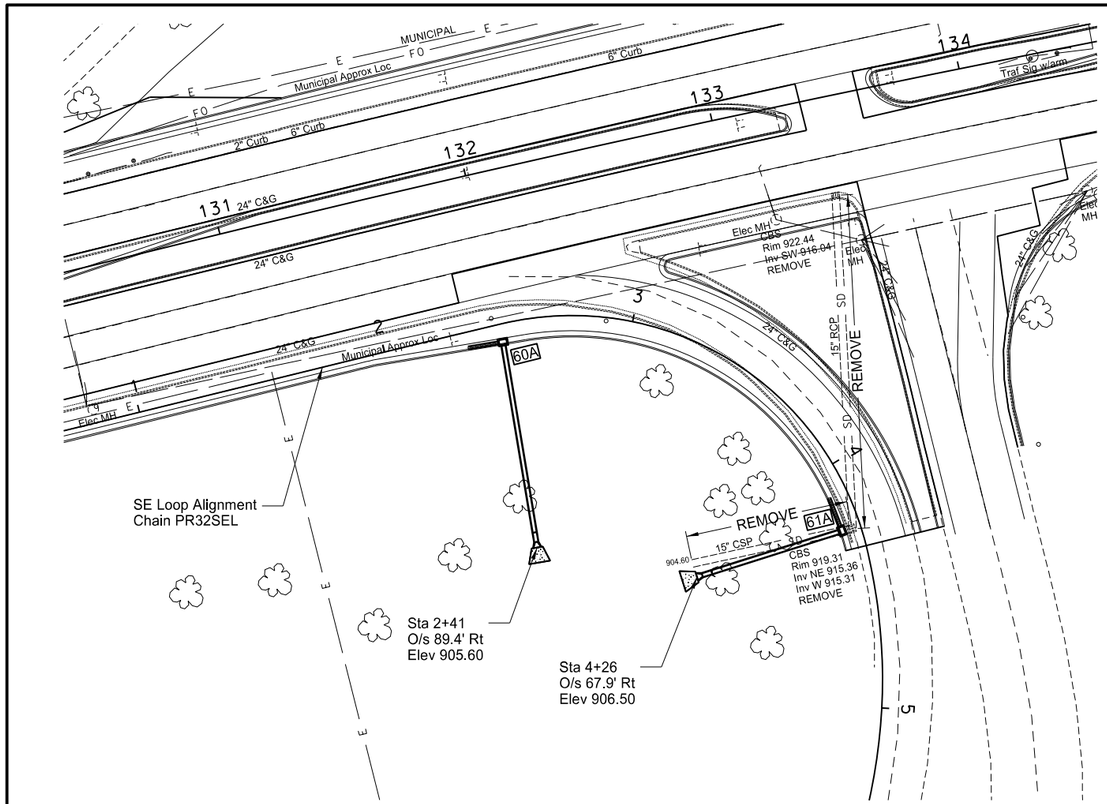
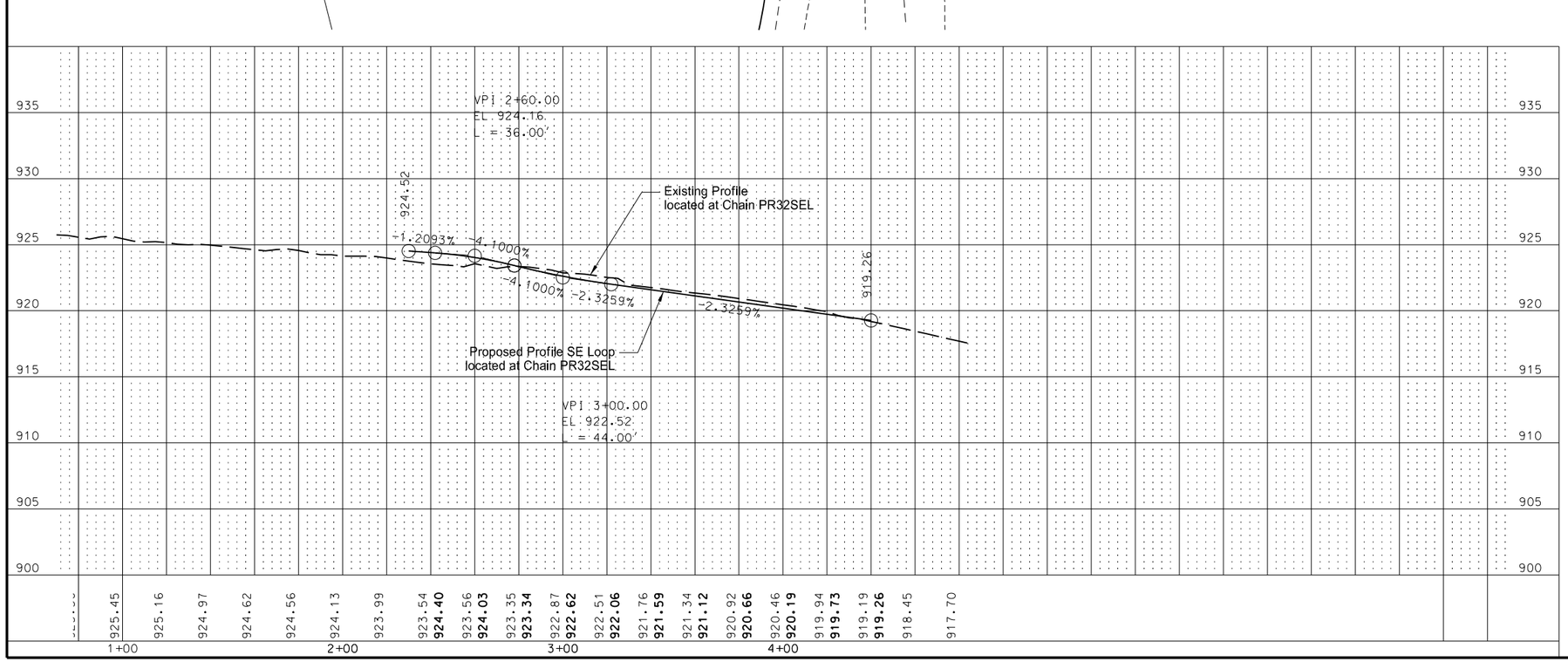
NW Ramp

Sta 12+00 to 15+86.20





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	25

SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 3+43 - 77.5' Lt to 4+27 - 3.3' Rt	132	LF
		Sta 4+13 - 67.6' Rt to 4+27 - 3.3' Rt	65	LF
202	230	REMOVAL OF INLETS		
		Sta 3+43 - 77.5' Lt	1	EA
		Sta 4+27 - 3.3' Rt	1	EA
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		60A to Sta 2+41 - 89.4' Rt	79	LF
		Sta 4+26 - 67.9' Rt to 61A	57	LF
722	3510	INLET - TYPE 2		
		60A	1	EA
		61A	1	EA
722	3910	INLET SLOTTED DRAIN 15IN		
		60A	10	LF
		61A	10	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 2+33 to 4+35.20	2	EA

Notes:

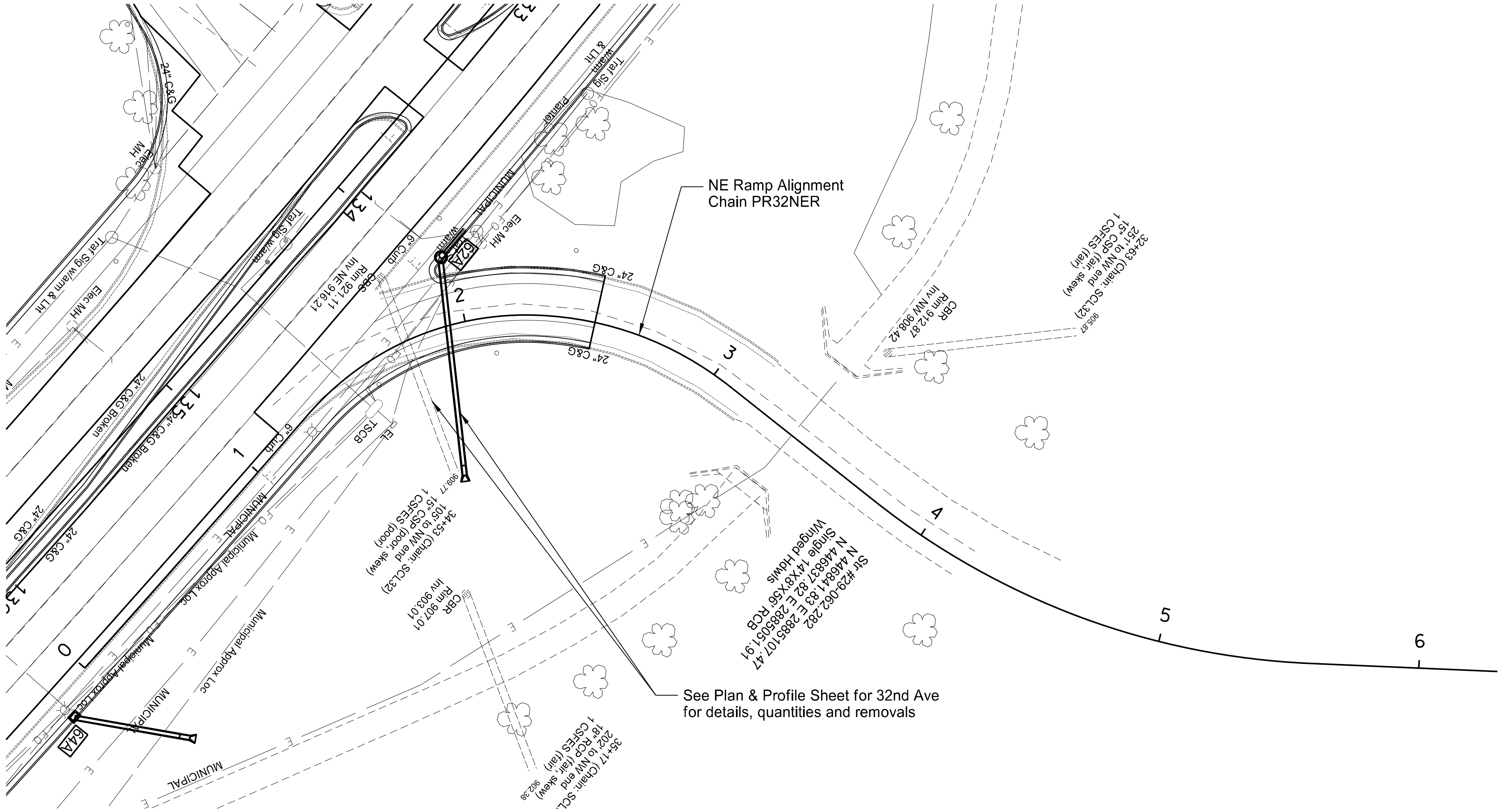
Stations & Offsets this sheet listed from Chain PR32SEL

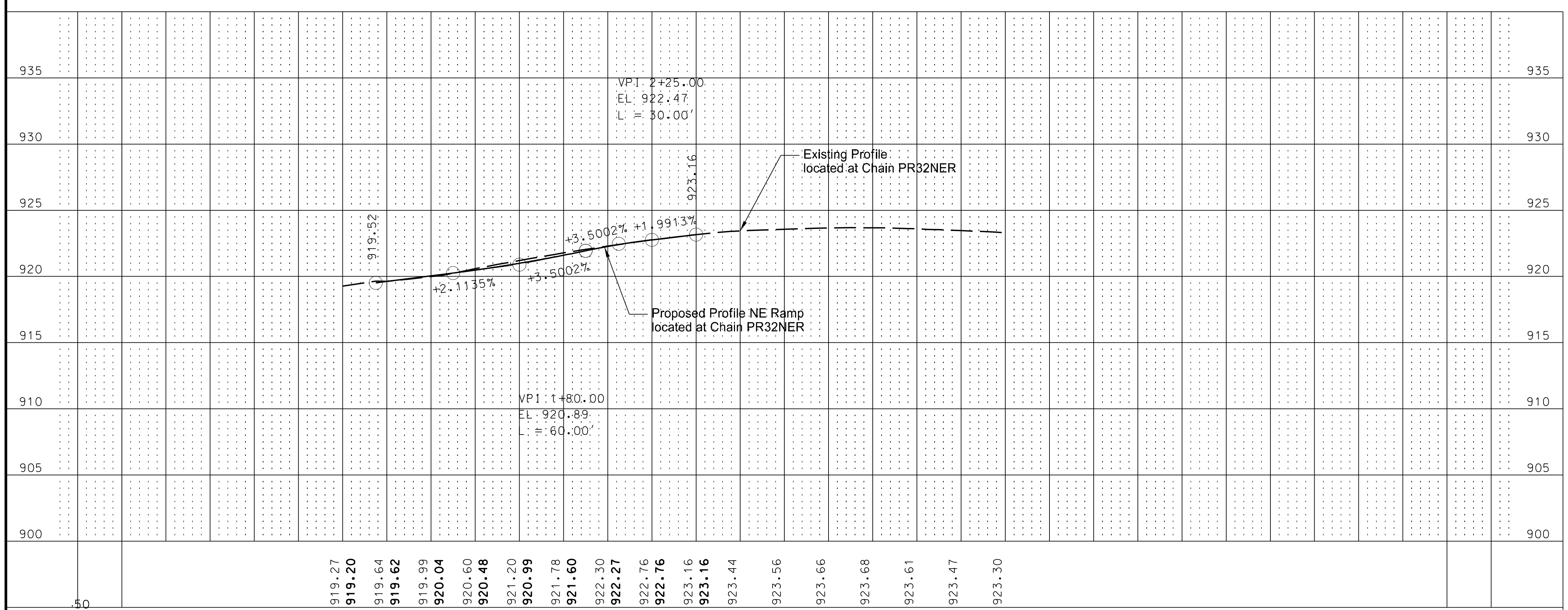
Plan & Profile

SE Loop

Sta 2+33 to 4+35.20

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	26





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NE Ramp

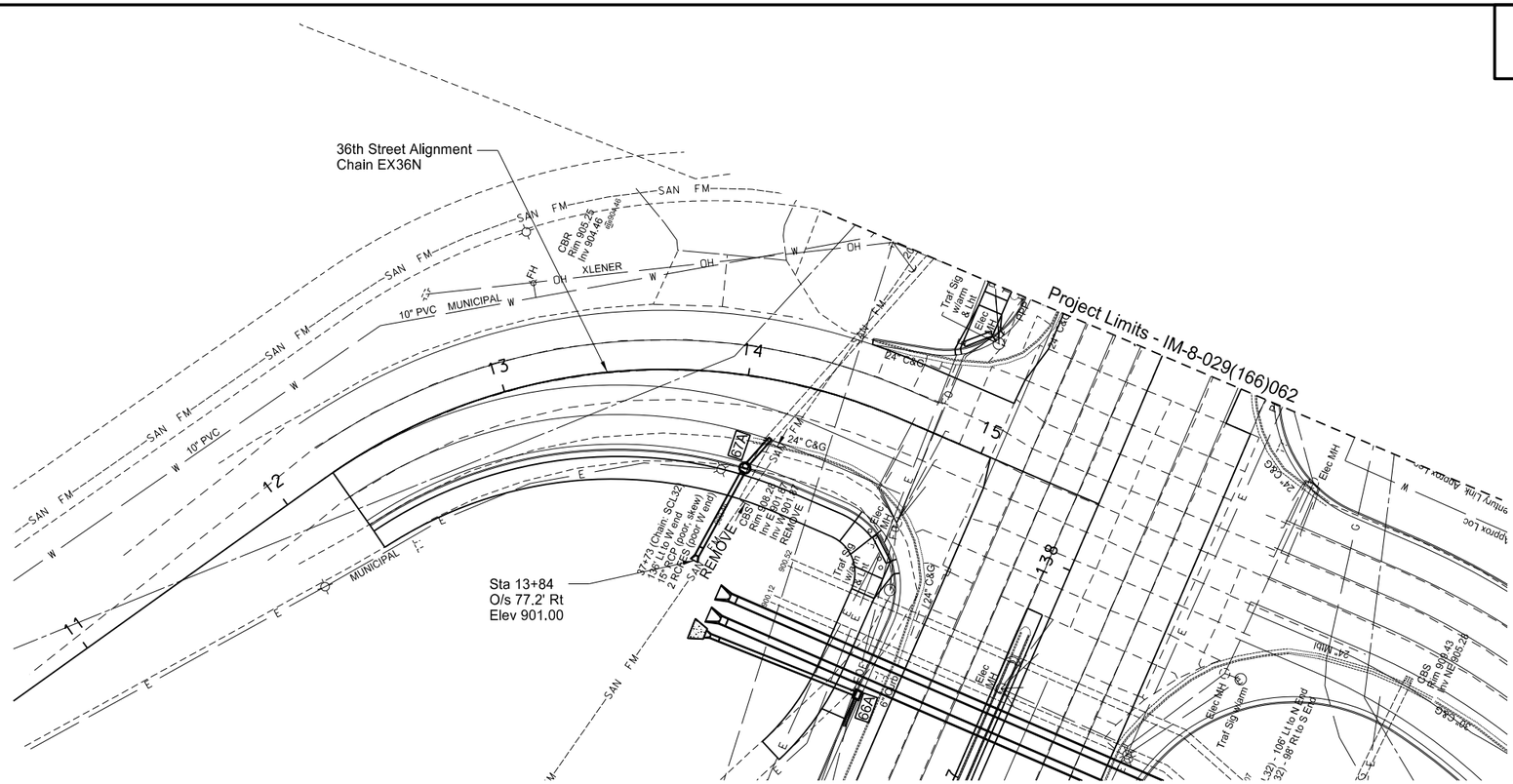
Sta 1+16.30 to 2+50

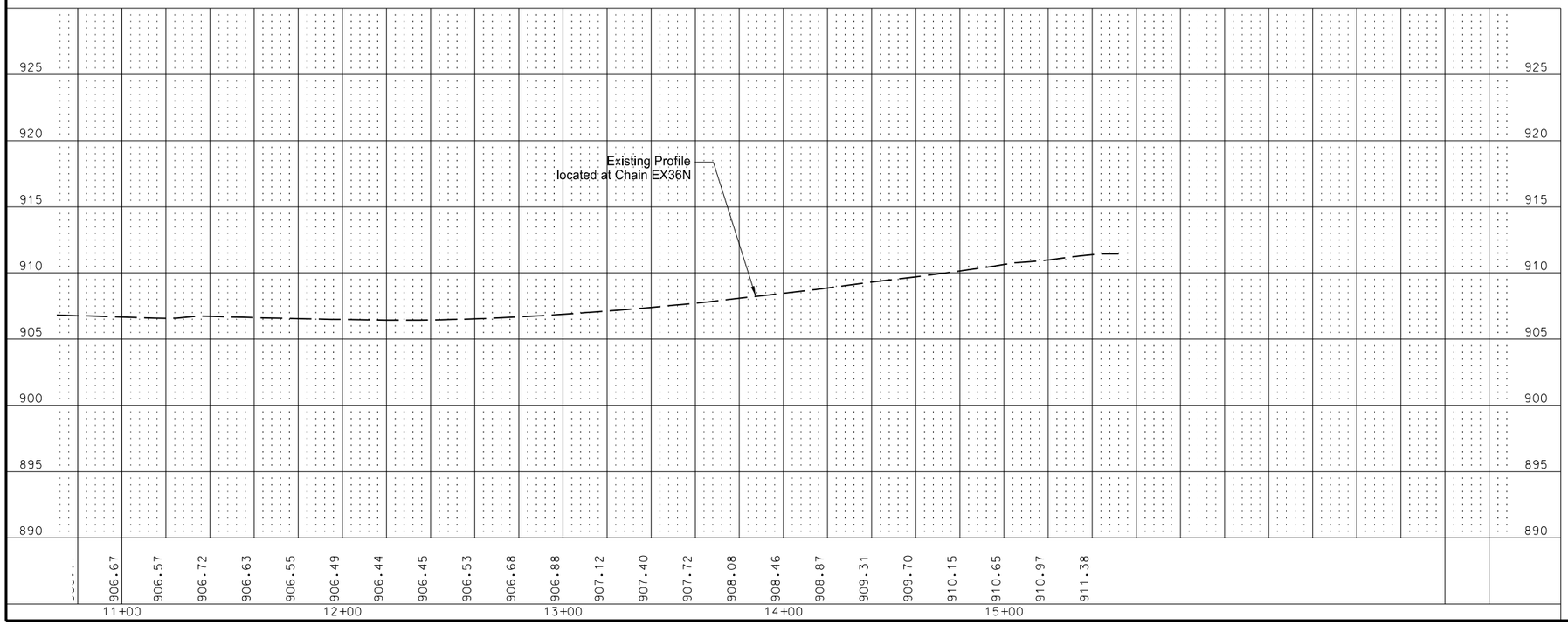
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	27

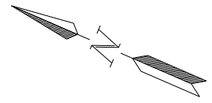
SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 14+13 - 23.8' Rt to 14+03 - 49.9' Rt	26	LF
202	0230	REMOVAL OF INLETS		
		Sta 14+13 - 23.8' Rt	1	EA
714	0620	PIPE CONC REINF 24IN CL III - STORM DRAIN		
		Sta 14+13 - 23.8' Rt to 67A	14	LF
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		67A to Sta 13+84 - 77.2' Rt	39	LF
722	3701	INLET SPECIAL - TYPE 2 48IN		
		67A	1	EA
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 13+84	1	EA

Notes:

Stations & Offsets this sheet listed from Chain EX36N







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36th Street - North of 32nd Ave

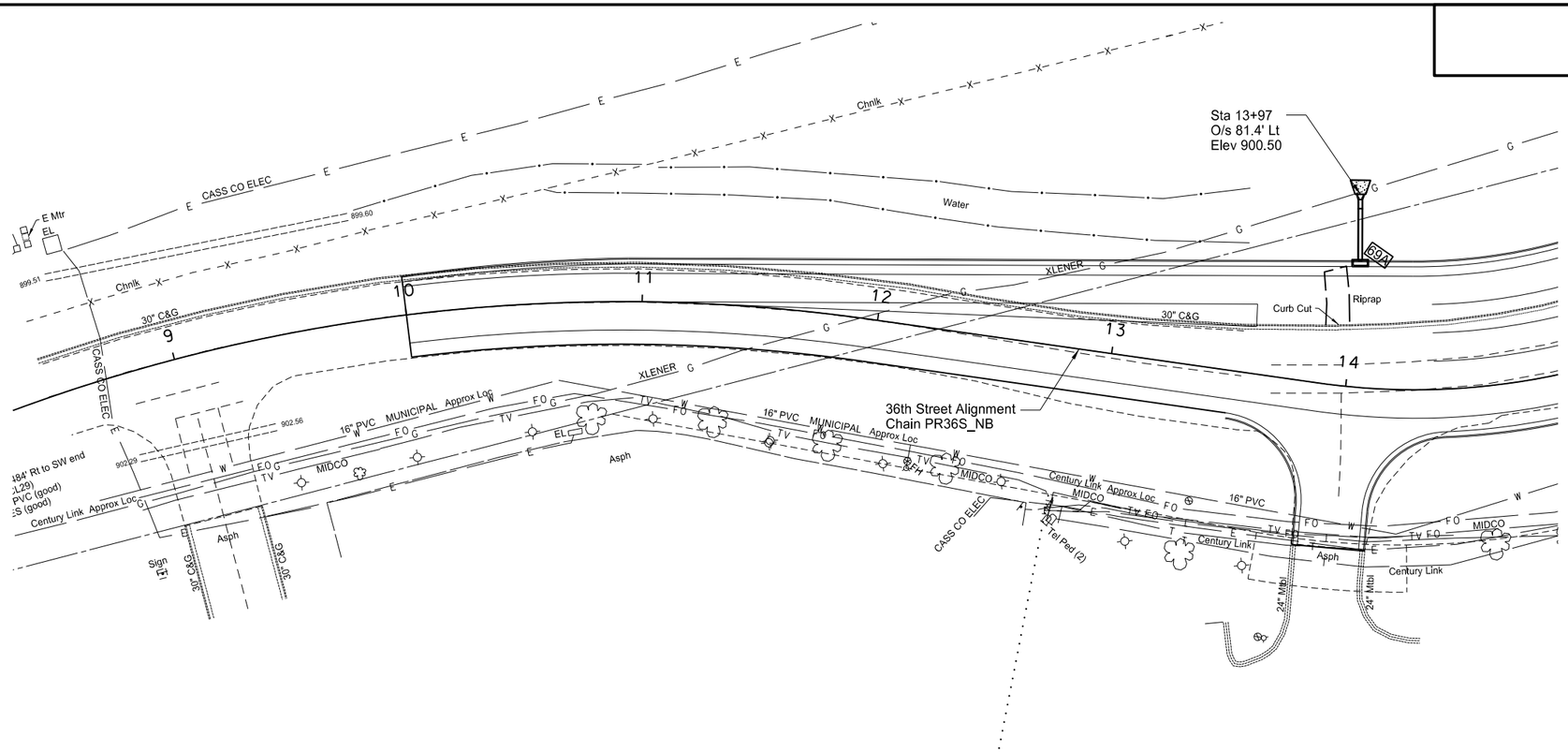
Sta 12+22.60 to Sta 14+76.40

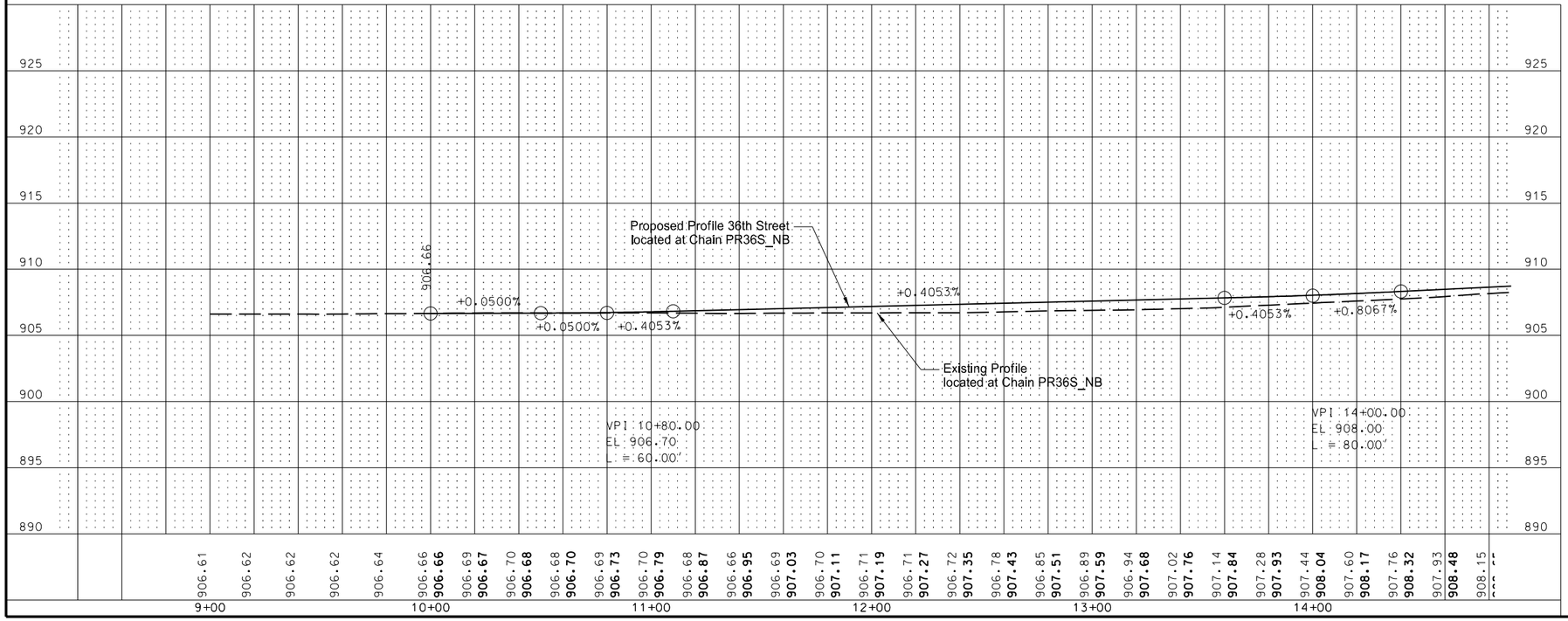
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	28

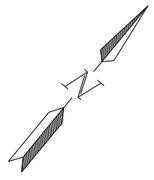
SPEC CODE	BID ITEM	QUANTITY	UNIT
714 4101	PIPE CONDUIT 18IN - STORM DRAIN		
	69A to Sta 13+97 - 81.4' Lt	26	LF
722 3520	INLET - TYPE 2 DOUBLE		
	69A	1	EA
754 0805	OBJECT MARKERS - CULVERTS		
	Sta 13+97	1	EA

Notes:

Stations & Offsets this sheet listed from Chain PR36S_NB







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36th Street - South of 32nd Ave

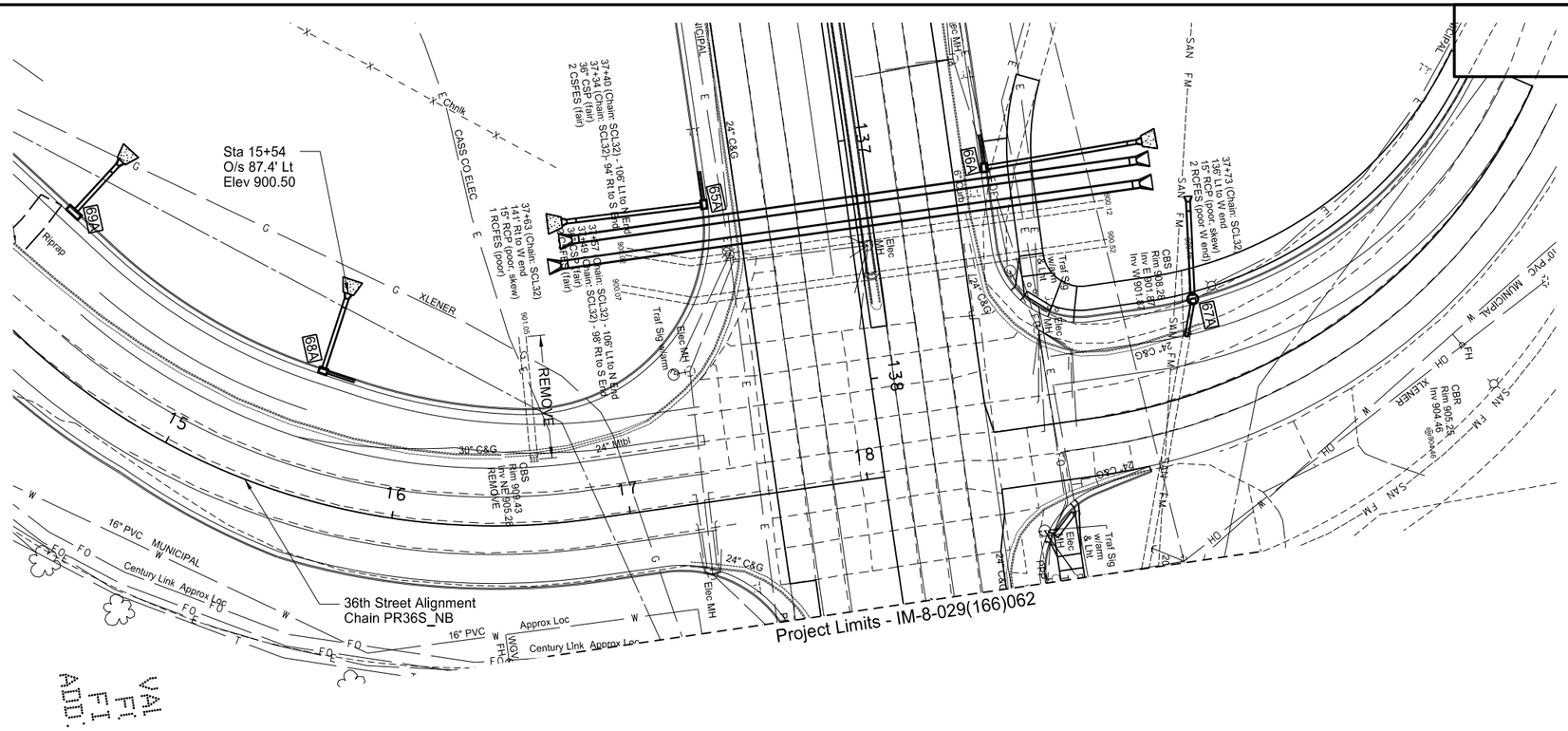
Sta 10+00 to 14+60

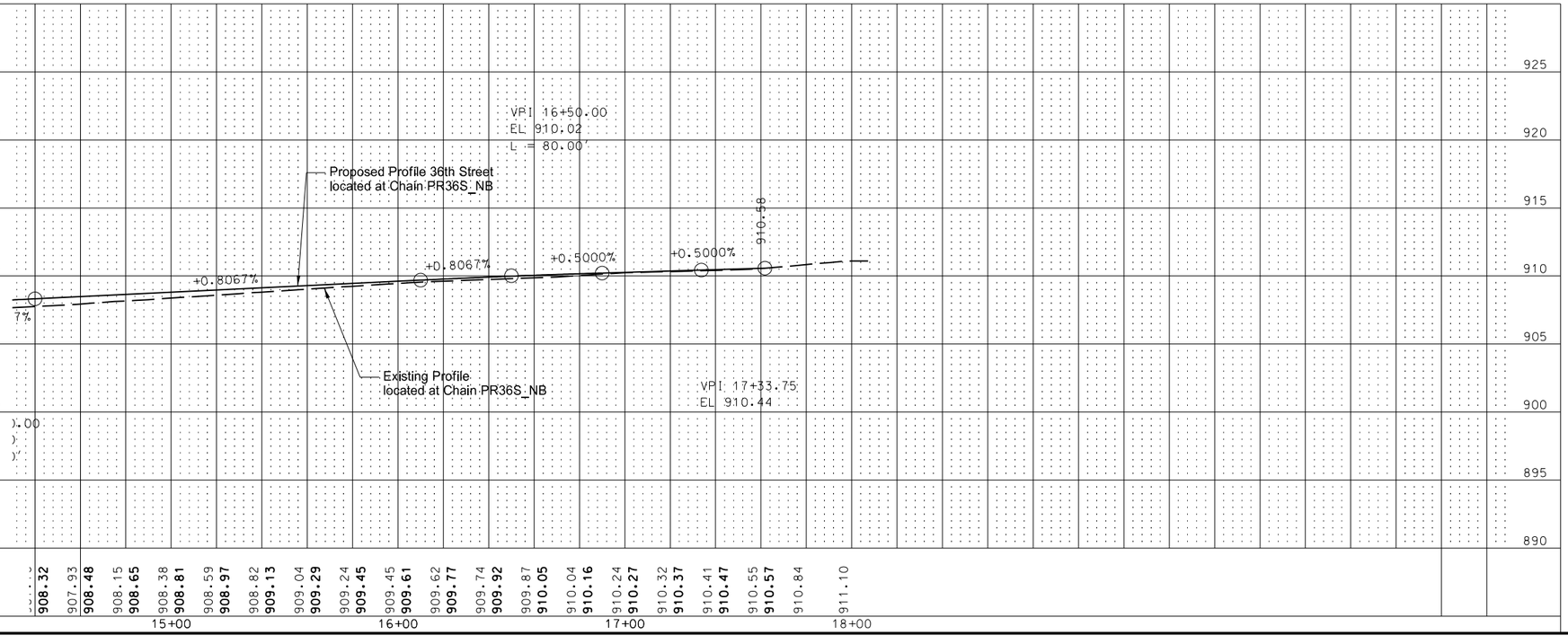
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	29

SPEC	CODE	BID ITEM	QUANTITY	UNIT
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		Sta 16+59 - 78.4' Lt to 16+61 - 27.1' Lt	51	LF
202	230	REMOVAL OF INLETS		
		Sta 16+61 - 27.1' Lt	1	EA
714	4101	PIPE CONDUIT 18IN - STORM DRAIN		
		68A to Sta 15+54 - 87.4' Lt	31	LF
722	3510	INLET - TYPE 2		
		68A	1	EA
722	3910	INLET SLOTTED DRAIN 15IN		
		68A	10	LF
754	0805	OBJECT MARKERS - CULVERTS		
		Sta 15+54	1	EA

Notes:

Stations & Offsets this sheet listed from Chain PR36S_NB





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36th Street - South of 32nd Ave

Sta 14+60 to 17+34.40

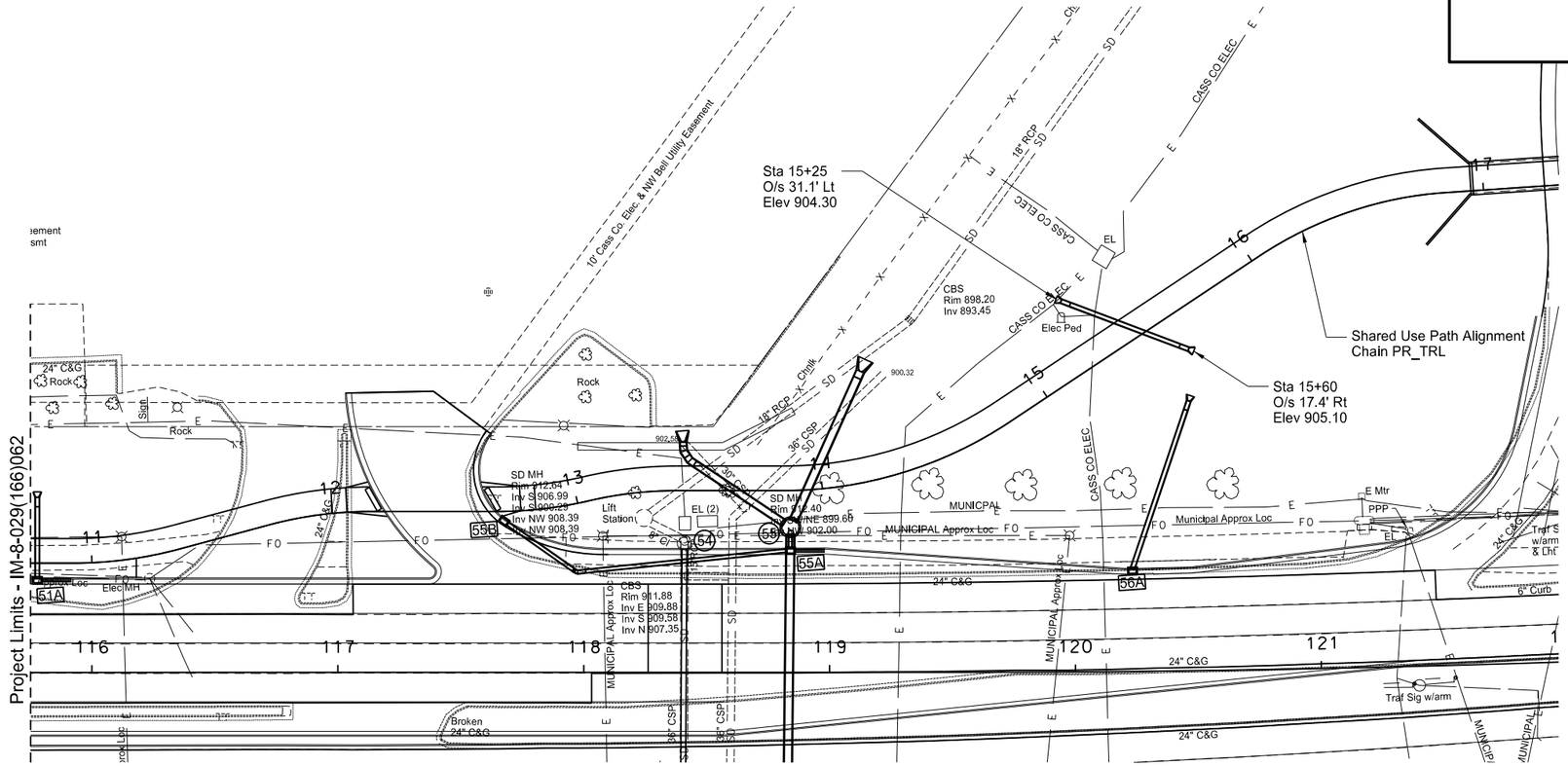
11/16/2016 8:09:28 AM jrensch R:\project\80029062.166\design\Sheets\060PP_019.dgn

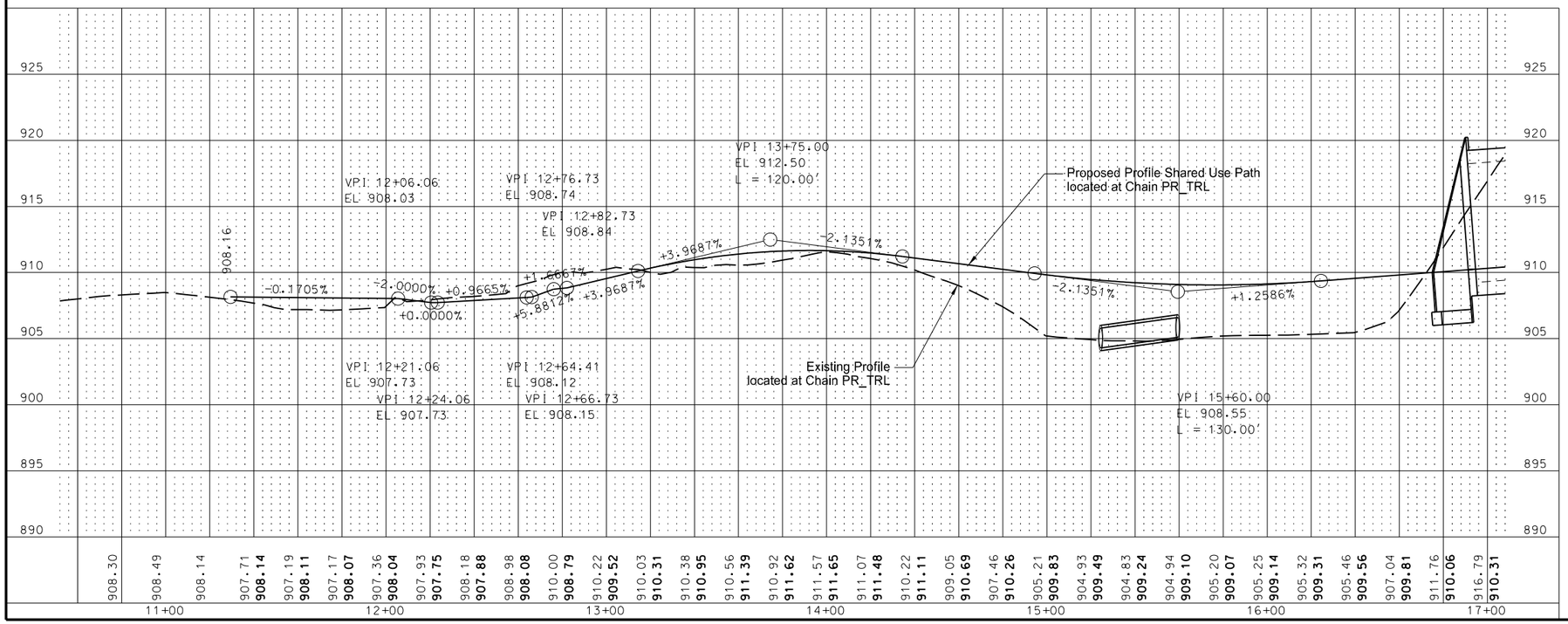
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(166)062	60	30

SPEC CODE	BID ITEM	QUANTITY	UNIT
714 4101	PIPE CONDUIT 18IN - STORM DRAIN		
	Sta 15+25 - 31.1' Lt to 15+60 - 17.4' Rt	56	LF
754 0805	OBJECT MARKERS - CULVERTS		
	Sta 10+75 to 17+00	2	EA

Notes:

Stations & Offsets this sheet listed from Chain PR_TRL





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Shared Use Path

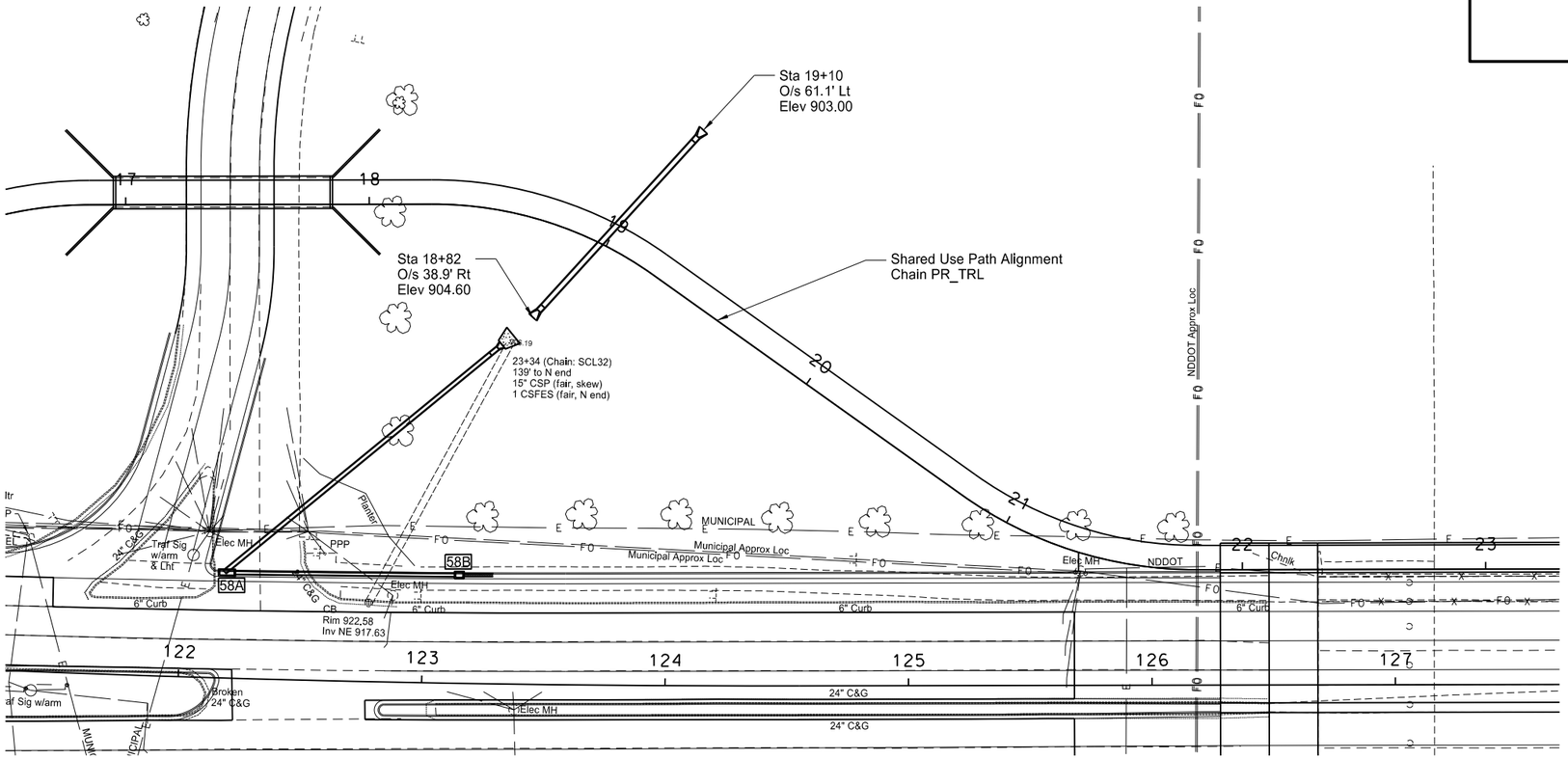
Sta 10+75 to 17+00

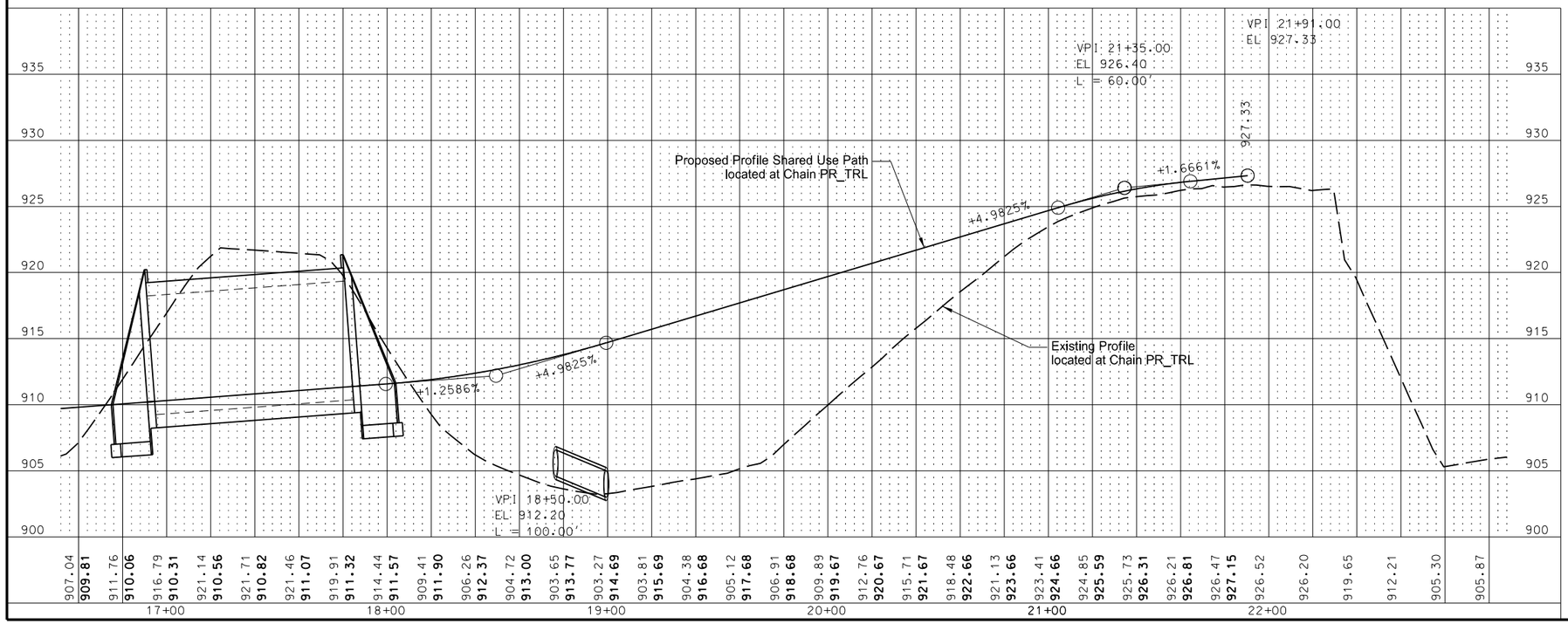
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	31

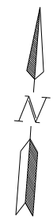
SPEC CODE	BID ITEM	QUANTITY	UNIT
714 4107	PIPE CONDUIT 24IN - STORM DRAIN		
	Sta 18+82 - 38.9' Rt to 19+10 - 61.1' Lt	97	LF
754 0805	OBJECT MARKERS - CULVERTS		
	Sta 17+00 to 21+91	2	EA

Notes:

Stations & Offsets this sheet listed from Chain PR_TRL







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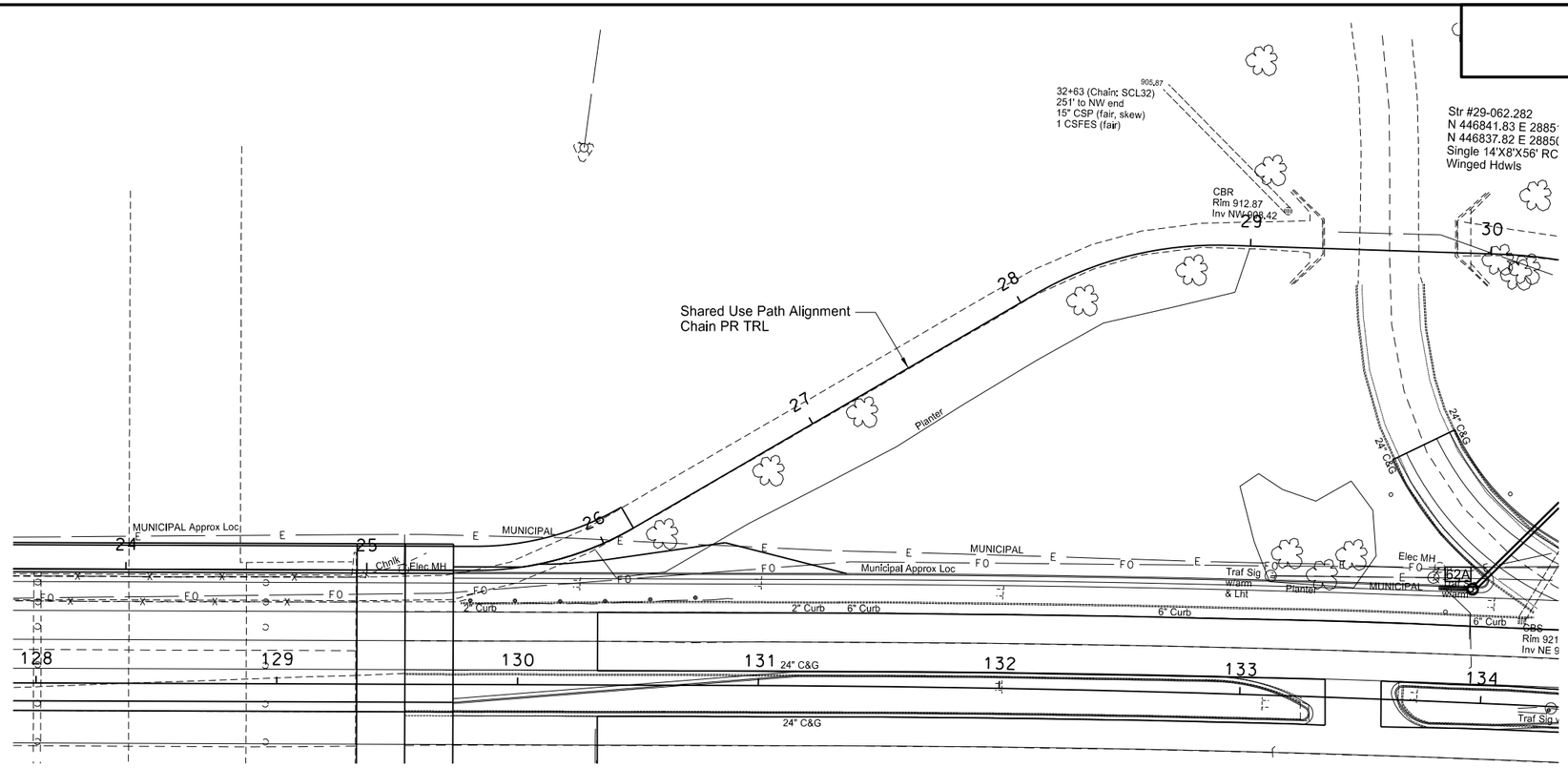
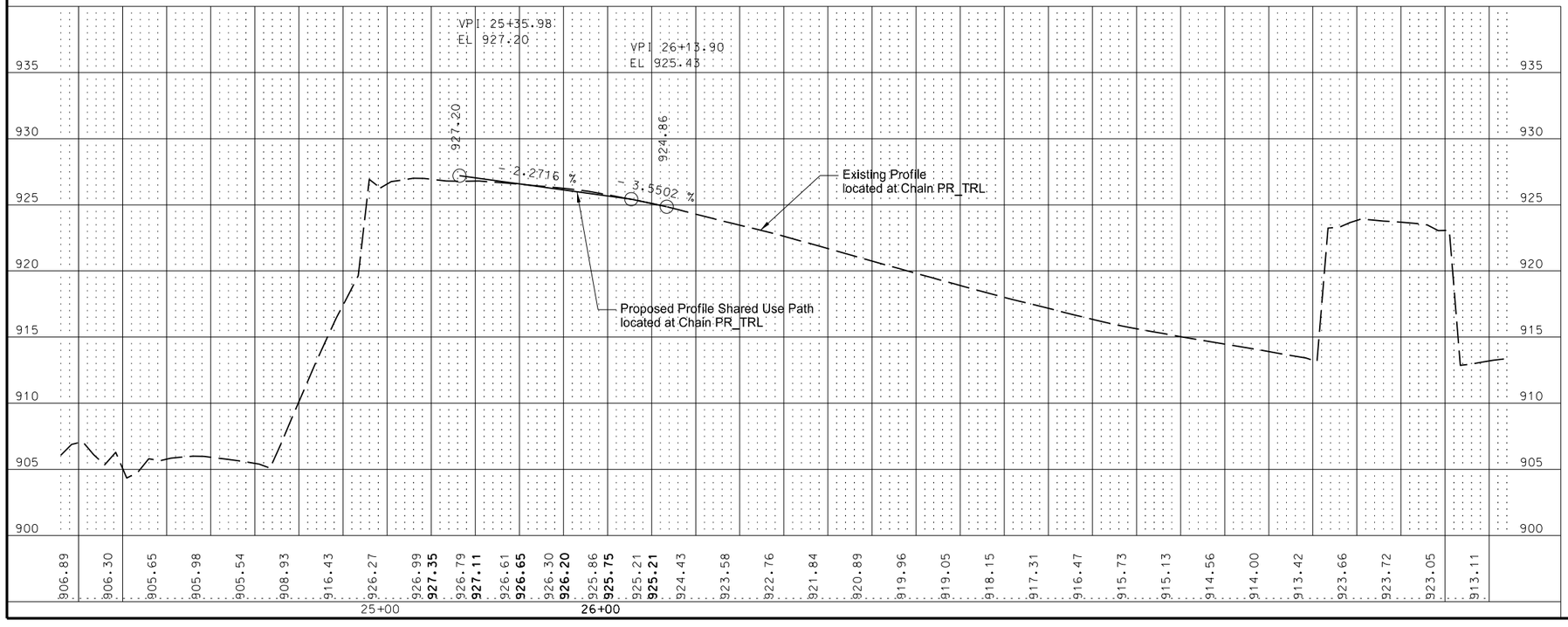
Shared Use Path

Sta 17+00 to 21+91

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	32





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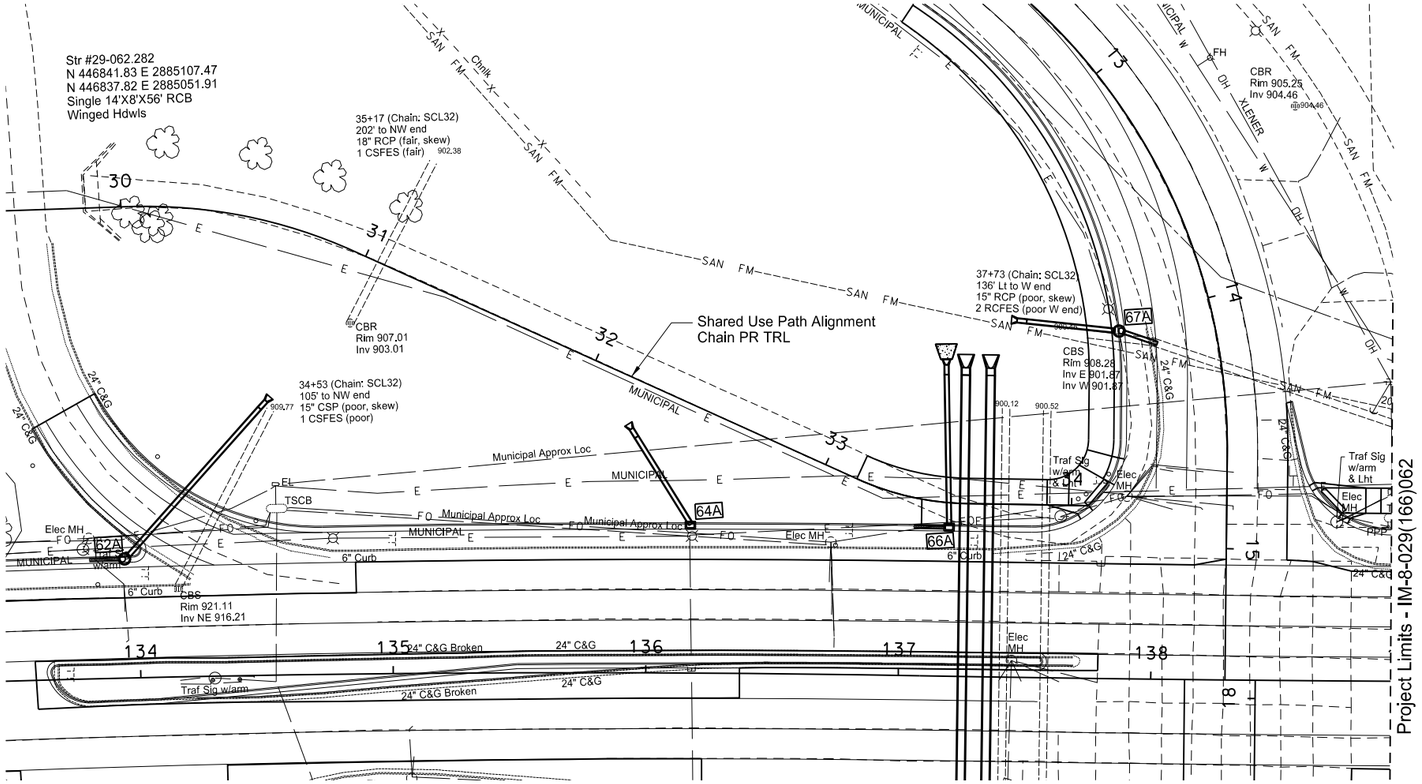
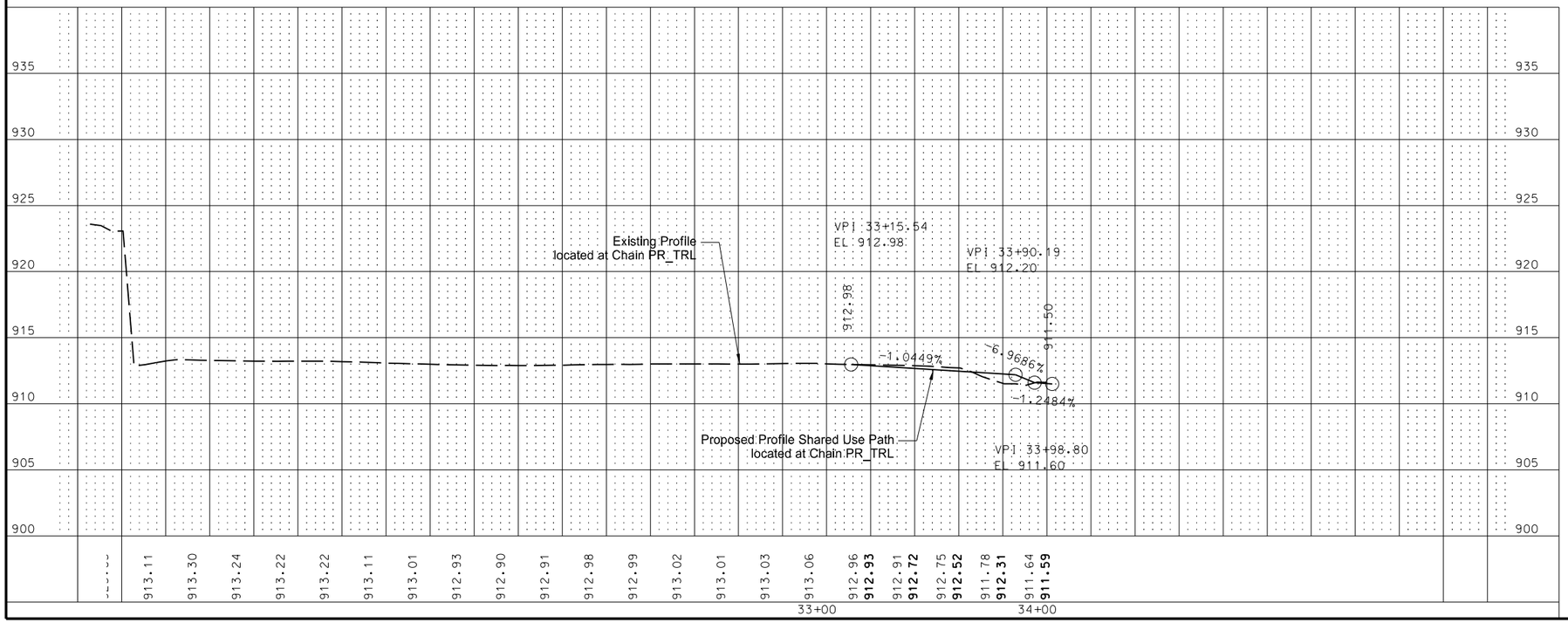
Shared Use Path

Sta 25+36 to 26+13.90

11/30/2016 10:35:50 AM jrensch R:\project\80029062.166\design\Sheets\060PP_022.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	33





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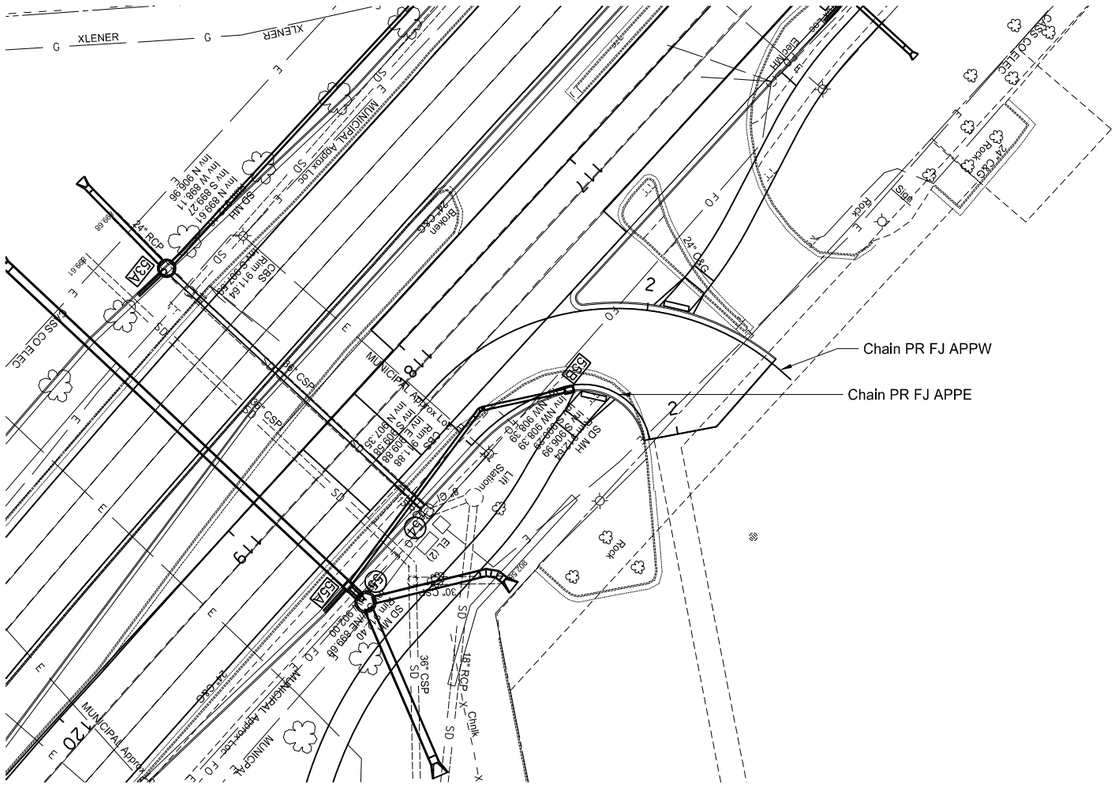
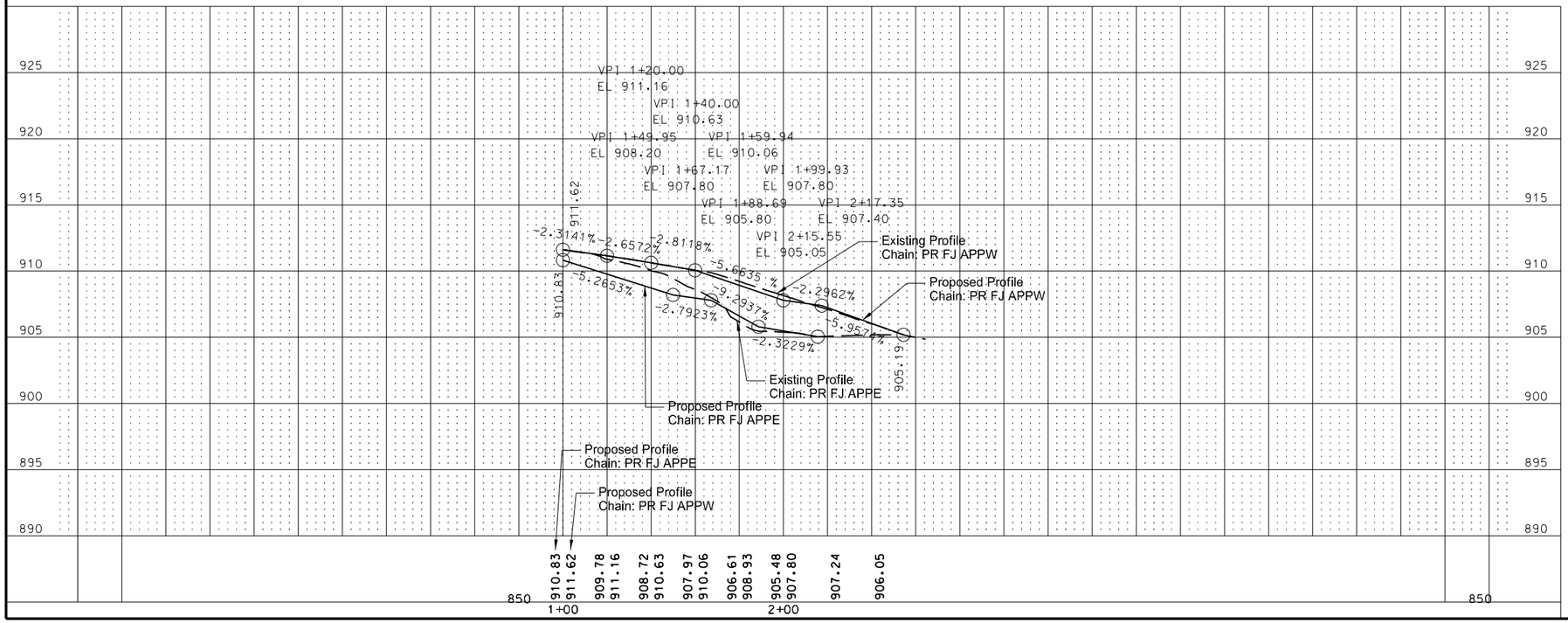
Shared Use Path

Sta 33+13.50 to 34+06.80

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(166)062	60	34





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Flying J Approach