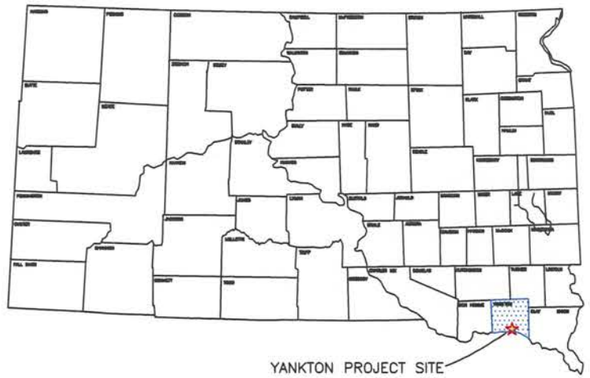
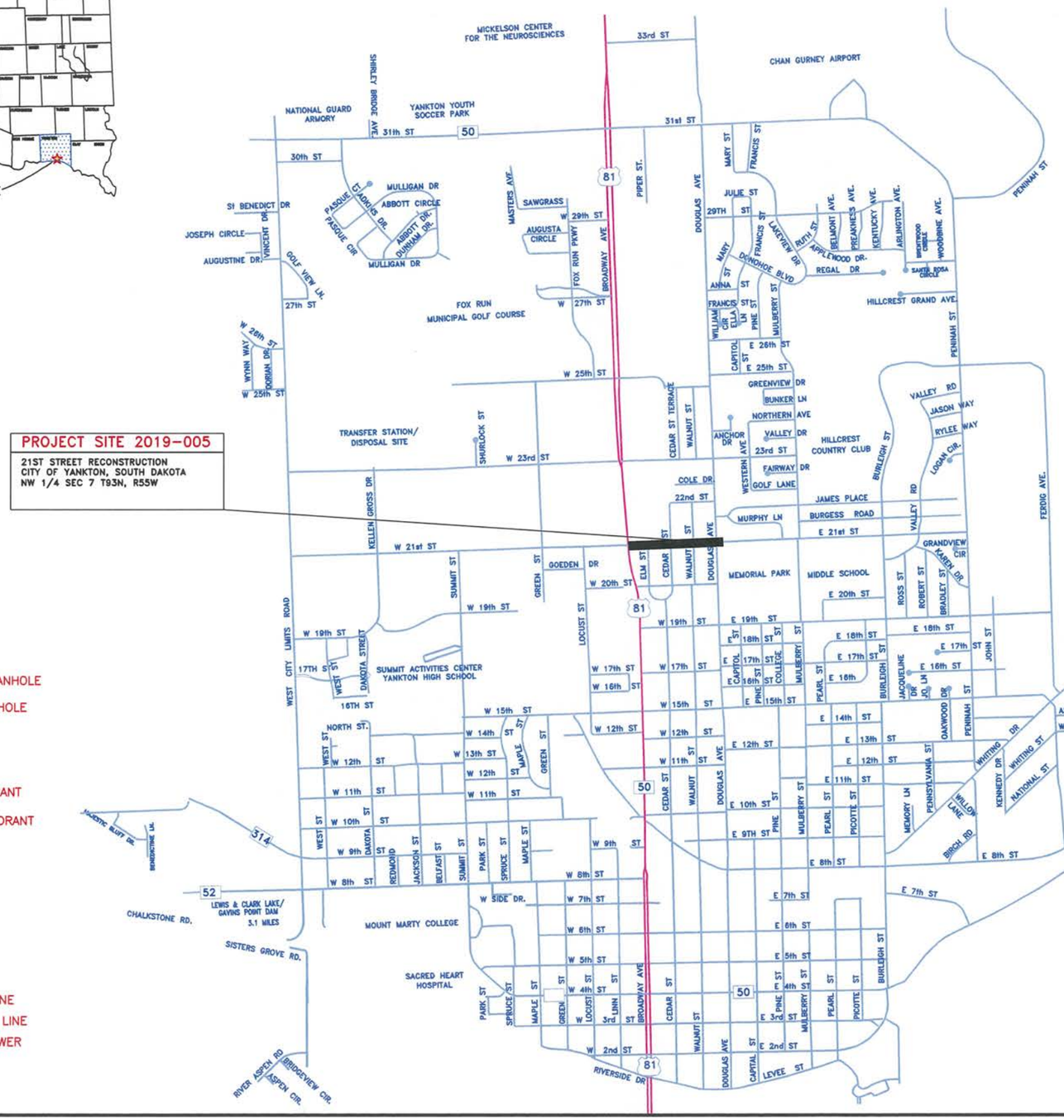
PROJECT	SHEET NO.	TOTAL SHEETS
2019–005	1	72
COVER SHEET		

2019-005
21ST STREET RECONSTRUCTION
FROM BROADWAY TO DOUGLAS





PROJECT SITE 2019–005

21ST STREET RECONSTRUCTION
CITY OF YANKTON, SOUTH DAKOTA
NW 1/4 SEC 7 T93N, R55W

LEGEND

- POWER POLE
- TELEPHONE BOX
- CURB INLET
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- VALVE
- PROPOSED VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- PROPERTY LINE
- S — SANITARY SEWER
- CURB
- W — EXISTING WATER
- PROPOSED WATER
- WS — WATER SERVICE
- GAS — BURIED GAS LINE
- E — BURIED ELECTRIC LINE
- TEL — BURIED TELEPHONE LINE
- D — EXISTING STORM SEWER

INDEX OF SHEETS

Registered Professional Engineer
REG. No.
12456
ADAM J.
HABERMAN
3-12-2019
SOUTH DAKOTA

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	2	72
QUANTITIES		

ESTIMATE OF QUANTITIES

BID ITEM NUMBER		ITEM	QUANTITY		UNIT
		Removals and Grading			
1		Mobilization	1		LS
2		Saw Existing Concrete	250		LF
3		Saw Existing Asphalt	240		LF
4		Removal of Concrete Pavement	2966		SY
5		Removal of Asphalt Pavement	4662		SY
6		Removal of Curb & Gutter	2967		LF
7		Incidental (See Note on Sheet 5)	1		LS
8		Unclassified Excavation (See Note on Sheet 4)	1		LS
9		Undercutting	250		CY
10		Topsoil (See Note on Sheet 6)	1		LS
11		Water for Embankment or Granular Material	100		KGal
		Erosion Control			
12		Seeding, Mulching, Fertilizer (See Note on Sheet 6)	1		LS
13		Vehicle Tracking Control and Maintenance	3		EA
14		Inlet Sediment Control	10		EA
15		Silt Fence	200		LF
16		Geotextile Fabric	2000		SY
		Water Main			
17		16" PVC Water Main C-905	1420		LF
18		8" PVC Water Main C-900	20		LF
19		6" PVC Water Main C-900	500		LF
20		1" Copper Service Line	100		LF
21		16" MJ Gate Valve W/Box	5		EA
22		8" MJ Gate Valve W/Box	1		EA
23		6" MJ Gate Valve W/Box	12		EA
24		16"x16"x6" Tee	6		EA
25		6"x6"x6" Tee	4		EA
26		16"x6" Cross	1		EA
27		16" MJ 45° Bend	7		EA
28		6" MJ 45° Bend	12		EA
29		16" MJ Sleeve	2		EA
30		8" MJ Sleeve	1		EA
31		6" MJ Oversized Sleeve	7		EA
32		6" MJ CAP	5		EA
33		16" Megalug	34		EA
34		8" Megalug	5		EA
35		6" Megalug	80		EA
36		6" Fire Hydrant	5		EA
37		Temporary Fire Hydrant	3		EA
38		Cut & Tie to existing Water Main	10		EA
39		1" Curb Stop	3		EA
40		Reconnect Existing Water Service Line	4		EA
41		Remove Fire Hydrant	5		EA
42		Remove Existing Water Main	170		LF
43		Remove Existing Valve	15		EA
44		Water Main backfill material	1940		LF

BID ITEM NUMBER		ITEM	QUANTITY		UNIT
		Sanitary Sewer			
45		F&I 4' Sanitary Sewer Drop Manhole (16' deep)	1		EA
46		10" PVC Sanitary Sewer Pipe	60		LF
47		8" PVC Sanitary Sewer Pipe	10		LF
48		10" PVC Sanitary Sewer Wye	1		EA
49		10" PVC Sanitary Sewer 90° Bend	1		EA
50		10" PVC Sanitary Sewer 45° Bend	1		EA
51		8" PVC Sanitary Sewer Wye	1		EA
52		8" PVC Sanitary Sewer 90° Bend	1		EA
53		8" PVC Sanitary Sewer 45° Bend	1		EA
54		10" PVC Sanitary Sewer 22.5° Bend	1		EA
55		Sanitary Sewer Main backfill material	70		LF
56		Remove existing brick manhole	2		EA
57		Replace & Adjust MH Frame & Lid (See Note on Sheet 6)	5		EA
58		Sanitary Sewer Bypass	1		LS
		Storm Sewer			
59		F&I 5'x5' Junction Box (14' deep)	1		EA
60		F&I 5'x5' Junction Box (10' deep)	1		EA
61		F&I 5'X5' Type S Inlet with 5'x5' Type S lid (10' deep)	1		EA
62		F&I 2'x3' Type B inlet	13		EA
63		F&I 3'x5' Type S inlet	1		EA
64		F&I 36" RCP CL 3 (Round)	12		LF
65		F&I 24" RCP CL 3 (Round)	72		LF
66		F&I 18" RCP CL 3 (Round)	446		LF
67		Storm Sewer Pipe Bedding Material	530		LF
68		Convert existing Junction Box to Type S Inlet	1		EA
69		Core existing inlet	2		EA
70		Adjust existing Type S Lid	1		EA
71		Remove existing Storm Sewer Manhole (14' deep)	1		EA
72		Remove existing 4'x6' Concrete block Junction Box (10' deep)	1		EA
73		Remove existing Type B Inlet	5		EA
74		Remove existing 18" Storm Sewer Pipe	44		LF
75		Remove existing 15" Storm Sewer Pipe	216		LF
		Traffic Control			
76		Traffic Control	2990		UNITS
77		Traffic Control Miscellaneous	1		LS
		Surfacing			
78		8" P.C.C. Pavement	5982		SY
79		6" P.C.C. Pavement	550		SY
80		Insert Steel Bars in P.C.C. Pavement	86		EA
81		8" P.C.C.P. Fillet Section	1605		SF
82		8" Valley Gutter Section	744		SF
83		6" Approach P.C.C. Pavement	1954		SF
84		6" Concrete Sidewalk	6410		SF
85		Detectable Warning Panel	196		SF
86		Retaining Wall SDDOT Type C	286		SF
87		Concrete Curb and Gutter (B68)	2486		LF
88		Concrete Curb and Gutter (B66)	300		LF
89		12" Aggregate Base Course (See Note on Sheet 5)	7975		SY
90		F&I 4" Asphalt Paving (Class D)	70		TONS

TABLE OF 21ST STREET QUANTITIES

PROJECT	SHEET NO.	TOTAL SHEETS
2015-005	3	72
QUANTITIES 1		

TABLE OF CONCRETE CURB & GUTTER REMOVAL

LOCATION	REMOVE QUANTITY (LF)
0+91 TO 9+91 LT.	900'
9+91 - 20.5' LT. TO 10+08 - 55' LT.	48'
0+93 TO 2+77 RT.	184'
2+90 - 35' TO 55' RT.	26'
3+27 - 35' TO 70' RT.	39'
3+40 TO 6+40 RT.	300'
6+40 - 20.5' RT. TO 6+50 - 55' RT.	40'
6+87 - 55' RT. TO 7+00 - 20.5' RT.	42'
7+00 TO 9+97 RT.	297'
9+97 - 20.5' RT. TO 10+12 - 55' RT.	45'
10+45 - 75' RT. TO 10+60 - 20.5' RT.	65'
10+45 - 70' RT. TO 10+60 - 20.5' LT.	60'
10+60 TO 13+56 LT.	296'
10+60 TO 13+56 RT.	296'
13+73 - 38' TO 53' RT.	50'
13+73.5 - 40' TO 52' LT.	12'
14+15 - 35' TO 54' RT.	54'
14+29 TO 14+87 LT.	58'
14+32 TO 14+87 LT.	55'
MISC.	100'
TOTAL	2967'

TABLE OF B68 CONCRETE CURB & GUTTER

LOCATION	INSTALL QUANTITY (LF)
0+91 - 20.5' LT. TO 9+93.9 - 20.5' LT.	903'
0+93 - 20.5' RT. TO 2+75.6 - 20.5' RT.	183'
3+41.6 - 20.5' RT. TO 6+36 - 20.5' RT.	294'
7+00 - 20.5' RT. TO 9+97.5 - 20.5' RT.	298'
10+59.9 - 20.5' LT. TO 13+55.7 - 20.5' LT.	296'
10+59.5 - 20.5' RT. TO 13+56.2 - 20.5' RT.	297'
13+73 - 38' RT. TO 87' RT.	49'
14+15 - 36' RT. TO 89' RT.	53'
14+29.2 - 18.5' LT. TO 14+86.9 - 18.5' LT.	58'
14+32.2 - 18.5' RT. TO 14+87.1 - 18.5' RT.	55'
TOTAL	2486'

TABLE OF B66 CONCRETE CURB & GUTTER

LOCATION	INSTALL QUANTITY (LF)
2+90 - 35' TO 61' RT.	26'
3+27 - 35' TO 74' RT.	39'
6+50 - 35' TO 55' RT.	20'
6+87 - 35' TO 55' RT.	20'
10+08 - 35' TO 70' LT.	35'
10+12 - 35' TO 74' RT.	39'
10+45 - 35' TO 74' RT.	39'
10+45 - 35' TO 70' LT.	35'
MISC.	47'
TOTAL	300'

TABLE OF SD DOT TYPE C RETAINING WALL

LOCATION	INSTALL QUANTITY (SF)
12+19 TO 13+59 - 29.3' TO 29.8' RT.	286 SF
TOTAL	286 SF

TABLE OF REMOVE CONCRETE PAVEMENT

LOCATION	QUANTITY (SY)
MAINLINE PAVEMENT	2154
DRIVEWAYS	207
SIDEWALKS	457
VALLEY GUTTERS	9
FILLETS	89
MISC.	50
TOTAL	2966

TABLE OF REMOVE ASPHALT PAVEMENT

LOCATION	QUANTITY (SY)
MAINLINE PAVEMENT	4662
TOTAL	4662

TABLE OF 8" PCC PAVEMENT

STATION TO STATION	QUANTITY (SY)
0+73 TO 13+76 - 18' LT. TO 18' RT.	5175
DOUGLAS AVE.	353
13+76 TO 14+12 - 18' LT. TO 18' RT.	137
14+12 TO 14+87 - 16' LT. TO 16 RT.	267
MISC.	50
TOTAL	5982

TABLE OF 6" PCC PAVEMENT

STATION TO STATION	QUANTITY (SY)
ELM STREET	132
CEDAR STREET	110
WALNUT STREET	207
MISC.	101
TOTAL	550

TABLE OF STEEL BAR INSERTION

LOCATION	QUANTITY (EA)
0+90.	45
13+76 TO 14+12 - 32' LT.	23
TOTAL	68

TABLE OF 8" VALLEY GUTTER PLACEMENT

LOCATION	QUANTITY (SF)
ELM	192
CEDAR	192
WALNUT RT.	168
WALNUT LT.	192
TOTAL	744 (SF)

TABLE OF SANITARY SEWER MANHOLE LOCATIONS

LOCATION
1+28 - 1' LT. (REPLACE & ADJUST MH FRAME & LID)
3+16 - 0' RT. (REPLACE & ADJUST MH FRAME & LID)
6+80 - 2' RT. (REPLACE & ADJUST MH FRAME & LID)
10+31 - 4' RT. (REPLACE & ADJUST MH FRAME & LID))
14+22 - 8' RT. (REMOVE EXISTING BRICK MANHOLE WITH DROP MANHOLE)
14+33 - 8' RT. (REMOVE EXISTING BRICK MANHOLE)

TABLE OF 6" SIDEWALK PLACEMENT

LOCATION	QUANTITY (SF)
0+93 TO 2+88 RT.	1550
3+35 - 25' RT.	174
3+38 - 28' LT.	65
6+45 - 28' RT.	128
6+90 - 28' RT.	142
6+75 TO 9+21 LT.	1525
10+00 - 28' LT.	216
10+05 - 28' RT.	114
10+52 - 28' RT.	145
10+55 - 28' LT.	114
10+63 TO 12+19 RT.	777
12+19 TO 13+59 RT.	705
13+66 - 30' LT.	160
13+63 - 26' RT.	80
14+23 - 25' LT.	150
14+26 - 24' RT.	165
MISC.	200
TOTAL	6410

TABLE OF 6" CONCRETE APPROACH / DRIVEWAY PAVEMENT

LOCATION	REMOVAL QUANTITY EXISTING SURFACE (SY)	REPLACE (6" CONC.) QUANTITY (SF)
2+85.9 TO 3+34.2 LT.	34.2	309
4+71.6 TO 5+04.2 LT.	15.4	139
4+75.6 TO 4+99.6 RT.	15.2	137
5+34.6 TO 5+55.7 RT.	15.7	141
6+43.1 TO 6+81.2 LT.	33.8	305
7+62.8 TO 7+89.8 RT.	21.7	195
8+36.5 TO 8+61.6 RT.	16.6	150
9+06.9 TO 9+23.1 RT.	13.2	120
9+16.3 TO 9+54.5 LT.	19.2	170
11+16.5 TO 11+33.1 LT.	11.4	103
12+01.1 TO 12+20.7 LT.	13.9	125
12+03.2 TO 12+19.1 RT.	10.6	60
TOTAL	207 SY	1954 SF

TABLE OF CONCRETE FILLET SECTION

LOCATION	QUANTITY (SF)	RADIUS
SW QUAD 21ST & ELM	125	14.5'
SE QUAD 21ST & ELM	125	14.5'
SW QUAD 21ST & CEDAR	125	14.5'
SE QUAD 21ST & CEDAR	125	14.5'
SW QUAD 21ST & WALNUT	125	14.5'
SE QUAD 21ST & WALNUT	125	14.5'
NW QUAD 21ST & WALNUT	125	14.5'
NE QUAD 21ST & WALNUT	125	14.5'
NW QUAD 21ST &DOUGLAS	164	17.5'
SW QUAD 21ST & DOUGLAS	161	17.5'
NE QUAD 21ST & DOUGLAS	123	17.5'
SE QUAD 21ST & DOUGLAS	157	17.5'
TOTAL	1605	

UNCLASSIFIED EXCAVATION 21ST STREET

CUT 3500 Cubic Yds

See Note on sheet 4 (Unclassified Excavation)

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	4	72
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NOTES

SPECIFICATIONS TO BE USED

City of Yankton Standard Specifications and the South Dakota Department of Transportation (SDDOT) Standard Specifications for Roads and Bridges 2015 Edition and Required Provisions, Supplemental Specifications, and/or Special Provisions as included in the Proposal.

UTILITIES

Location and protection of all underground utilities is the Contractors responsibility. The Contractor will be required to coordinate work with the utility companies. Existing utilities and service lines that coincide with proposed underground main locations are to be located in advance by the contractor such that proposed underground mains can be adjusted to avoid conflict.

Utility locations are coordinated by calling: 1-800-781-7474 or dial 811

SEQUENCE OF OPERATIONS

The Contractor shall use the following sequence of operations that are listed on the traffic control sheets unless an alternate is approved by the Engineer. An alternate sequence must be submitted in writing a minimum of one week prior to the preconstruction meeting.

The Contractor will need to get an approved Traffic Control plan that coordinates the traffic and parking plan for Hyvee, Walgreens, Elm Street Plaza, Stewart School and residences along the project.

Phase 1 construction area (See sheet 8) is from Broadway to Cedar. This area can be closed to traffic and removals, water main installation and storm sewer installation can be installed while school is in session. The area from Cedar to Douglas shall be open to traffic for buses and student pick up areas until school is out for the 2019 spring session. The Elm Street intersection shall be opened to north to south traffic flow from the Hyvee parking lot as soon as the water main has been placed.

Aggregate Base Course will be used in lieu of Service Gravel as directed by the engineer to temporarily re-open portions of streets after the pavement is removed.

REMOVAL OF EXISTING CONCRETE PAVEMENT

Payment for concrete removal is included in the contract unit price per square yard for "Removal of Concrete Pavement". Payment shall be at the contract unit price per square yard, regardless of variations in thickness. Joints shall be sawed wherever existing concrete is to be connected to new construction.

When asphalt is laid over concrete pavement, removal of the asphalt surfacing shall be incidental to the unit price for "Removal of Concrete Pavement".

REMOVAL OF EXISTING ASPHALT PAVEMENT

Payment for asphalt mat removal is included in the contract unit price per square yard for "Removal of Asphalt Concrete". Payment shall be at the contract unit price per square yard, regardless of variations in thickness.

6" CONCRETE SIDEWALK

Concrete sidewalk shall be constructed in accordance with Section 651 of Standard Specifications. Base Course material, two (2) inches thick, shall be placed beneath the sidewalk.

GENERAL MAINTENANCE OF TRAFFIC

1. Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the City, and to the satisfaction of the Engineer.

2. The Contractor shall designate an employee whose responsibility is the maintenance of traffic, 24 hours a day and 7 days a week. The person so designated must have training and experience in the field of construction traffic control and be knowledgeable about the Manual on Uniform Traffic Control Devices (MUTCD). The cost of the traffic control person shall be incidental to the contract lump sum price for Traffic Control Miscellaneous. The employee selected must be approved by the Engineer. The name, phone number, and location of person(s) shall be provided to the county sheriff's department and the local police department. Road closure and barricading shall immediately be reported to the local police department by the Contractor. Local police department phone number 605-668-5210

3. Work activities during non-daylight hours are subject to prior approval.

4. The contractor shall maintain traffic control every day. The contractor shall have $200.00 per day deducted from the contract for each day that traffic control is not maintained. If traffic control is not in place when the contractor begins work which requires traffic control, payment for bid item "Traffic Control" will be reduced by 50%.

5. The Contractor shall notify the City of Yankton Street Department prior to construction to enable the city forces to remove and salvage existing traffic control signs. City of Yankton Street Dept. number 605-668-5211

WASTE DISPOSAL SITE

Contractor shall dispose of broken concrete and asphalt generated by this project at the city stockpile site located at 23rd and Kellen Gross Drive. No tipping fee will be assessed to Contractor for broken concrete and asphalt disposed of at this site Concrete and asphalt is to be kept separate from earth material during the removal process. Concrete and asphalt may be mixed.

Asphalt contaminated with soil during the removal process or concrete containing reinforcing steel or contaminated with soil must be disposed of at the Yankton rubble site, 23rd and Kellen Gross Drive. Disposal fees shall be the Contractors responsibility, and considered incidental to other pay items.

The Contractor will be required to use a state permitted solid waste disposal facility. The Contractor can obtain a list of permitted solid waste disposal facilities in the Yankton area or discuss proper disposal of construction and demolition debris by contacting Waste Management Program at 1-(605)-773-3153.

Construction/demolition debris may not be disposed of within the ROW.

UNCLASSIFIED EXCAVATION

Unclassified Excavation will be paid for on a lump sum basis. The bid item for "Unclassified Excavation" shall include removing the existing material to a depth of 20 inches below the new road surface shown on the typical sections. Estimated quantities in cubic yards are shown below. These estimates are based on the assumption of 4 inches of existing Asphalt Pavement and 8 inches of Concrete Pavement being removed separately.

Estimate of 3500 cu yds. of removal. Excess material is to be hauled to City property located at 33rd and Douglas Ave.

GENERAL NOTES

The Contractor will be required to raze, remove and dispose of all buildings and foundations, structures, fences, advertising signs, and other obstructions of which any portion are on the right-of-way or Temporary Easements except Utilities and those for which other provisions have been made for removal, in accordance with Section 110 of the Standard Specifications.

The removal and disposal of all buildings, foundations and other obstructions not removed under Incidental Work or on a unit basis shall be considered as subsidiary work to the other Contract Items and no separate payment will be made for their removal and disposal.

8" & 6" NONREINFORCED CONCRETE PAVEMENT

The Coarse Aggregate shall be Crushed Ledge Rock.

The fine aggregates may require screening as determined by the Engineer.

The concrete mix shall be Class A40 concrete paving mix when slip form construction is used and Class A45 when formed construction is used.

Portland Cement Concrete Pavement shall have a minimum cement content of 600 pounds per cubic yard and Class C Fly Ash will be excluded.

In lieu of an automatic subgrader operating from a preset line, a motor grader or other suitable equipment may be used to bring the base course to final grade prior to placement of the concrete.

A construction joint shall be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

There will be no direct payment for trimming of the Base Course for PCC pavement. The trimming will be considered incidental to the related items required for PCC pavement. Trimming shall be performed as required by Section 380.3c of the Standard Specifications.

An automated paving machine such as a Bidwell, or equivalent, shall be required for main line paving. An air or vibratory screed will not be allowed for main line paving.

PEDESTRIAN TRAFFIC

The Contractor will be required to maintain pedestrian access during construction. Pedestrian access shall be ADA accessible and shall conform to the Manual on Uniform Traffic Control Devices 2009 edition. Access can either be maintained on concrete sidewalk or on a temporary boardwalk. This work may include but is not limited to sawing existing sidewalk to leave half in place, staging sidewalk removal and construction to maintain access, installing safety fence around work areas, installing pedestrian detour signage, and construction and removal of temporary boardwalk. The Contractor shall determine the actual location of temporary access during construction and shall be approved by the Engineer. Payment for all work and associated materials shall be incidental to the contract lump sum price for "Traffic Control Miscellaneous".

ACCEPTANCE TESTING

The City will be responsible for taking the first acceptance test and a backup test if required. All subsequent tests required due to failures will be paid by the Contractor by deducting the cost from the pay request.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	5	72
NOTES		

NOTES

CONCRETE JOINT SEALER

Concrete Joint Sealer shall be hot poured elastic joint sealer and shall conform to section 870 of the Standard Specifications. Payment for concrete joint sealer shall be incidental to PCC Pavement and no separate payment shall be made.

TRAFFIC CONTROL

The unit quantity for Traffic Control was determined and based on the proposed sequence of operations. Any change in sequence requested by and primarily for the benefit of the contractor which increases the quantity, will be at the contractors expense.

SURFACING THICKNESS DIMENSIONS

Except as hereinafter set forth, plans square yards will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans square yards will not be varied to achieve the required elevation.

CURING OF CONCRETE

Portland Cement Concrete Pavement, Concrete Curb & Gutter, Sidewalks, Valley Gutters, and Fillets shall be cured. All concrete shall be cured in accordance with section 380.3.M2 of the 2015 SDDOT Standard Specifications for Roads and Bridges except as modified in this note. All concrete shall be cured with a White Pigmented Linseed Oil Base Emulsion Compound when cured using the Impervious Membrane Method. Curing compound material shall be in accordance with section 821.1.

GEOTEXTILE FABRIC FOR SUBGRADE STABILIZATION

Geotextile fabric shall be installed at locations designated by the engineer underneath the granular base course. The bid item GEOTEXTILE FABRIC has been established to pay for all labor, equipment and material to install the fabric.

Pay quantities for the geotextiles will be paid for at the contract price per square yard in place. Measurement for payment excludes the geotextile used for overlapping as well as seam overlaps. Installation shall be in accordance with the manufacturer's recommendations. Overlap shall be a minimum of 24". The end of the roll shall overlaps shall be 3' min.

The contractor shall not drive equipment directly on top of the geotextile. Should the geotextile be torn or punctured, the damaged area shall be repaired or replaced by the contractor at no expense to the owner. The repair shall consist of a patch of the same type of geotextile a minimum of 3' from the edge of any part of the damaged area. Geotextile fabric shall conform to the requirements listed below. The contractor shall provide a certificate of compliance verifying that the material meets the specification prior to the installation of the fabric.

1. Wide Width Tensile Strength (ASTM D-4595) 3600lb/ft min.
2. Wide Width Tensile Strength at 5% Strain(ASTM D-4595) 1350 lb/ft min.
3. Permittivity (ASTM D-4491) 0.25 sec-1 min.
4. UV Resistance at 500 hours (ASTM D-4355) 70% min.

The City has verified that the following products meet these specifications.

1. Mirafi HP370
2. Propex Getotex 3x3
3. Lumite GTF465

AGGREGATE BASE COURSE

Aggregate Base Course will be supplied by the City of Yankton. Material can be obtained at City stockpile site located at 23rd and Kellen Gross Dr. This material is to be weighed before leaving landfill. The Contractor is to supply his own personnel and equipment to load trucks. Landfill hours are from 8am to 3:45pm. This material to be used under all newly placed concrete /asphalt and to maintain access to intersecting streets and driveways as needed. Unit price shall constitute full compensation for personnel and equipment to load, haul, and place material. Aggregate Base Course shall be compacted to 95% of standard proctor density.

EROSION CONTROL - SILT FENCE NOTES

1. CONSTRUCTION

The work covered by this section consists of furnishing all labor and equipment and the performance of all operations in connection with the construction, maintenance and removal of the silt fence for the control of siltation on the project, complete and in accordance with the plans and standard plates. The Contractor shall be responsible for accomplishing the required construction work on this project in such a manner as to effectively minimize and control water pollution which might be caused by soil erosion from the project. It is intended that these features be maintained in appropriate functional condition from initial construction stages to final completion of the project.

After rainfall events, the Contractor shall take all necessary precautions to prevent silt from being carried away from the project site when water is being pumped out of any area where water is backed up on the project site

In addition to the details shown in the plans, other provisions for controlling erosion may be incorporated.

2. MATERIALS

A. Steel Fence Posts

The steel line posts for field fence shall have a cross section of one and one-half inches by one and one-half inches. The average weight shall be less than 1.33 pounds per linear foot. Paint for steel fence posts shall be the manufacturers standard paint finish.

B. Silt Fabric

The approved brands of engineering fabrics for silt fence are listed below:

Manufacturer/Distributor	Brand Name
Amoco Fabrics & Fibers Co.	Silt Stop
Carthag Mills	FX-325
Linq Industries Fabrics	GTF 400 EO
Mirafi Division of Nocolon	700 XG
Webtec, Inc.	Econofence with netting

3. BACKFILL

All compaction of backfill shall be accomplished with a mechanical tamper or pneumatic tamper. All compacting equipment shall be operated according to the manufacturers recommendations.

4. PAYMENT

Payment shall be based on the lineal foot of silt fence satisfactorily constructed and measured from outside of the end posts. The work completed in accordance with the plans and specifications at the applicable contract price in the bid schedule which price shall constitute full compensation for furnishing all materials, equipment. labor. and tools necessary for completion of the work. The unit price shall also include removing muck from behind the silt fence after rain events and removing the silt fence when it is no longer needed.

INCIDENTAL WORK

All salvageable materials shall be taken out intact and stockpiled within the right-of-way to the satisfaction of the Engineer. The Contractor shall perform salvage operations in a manner that will prevent damage to the salvageable materials.

Salvable materials will be picked up by the City.

All concrete removed from the existing structures and other disposable material shall be disposed of in accordance with the Notes Regarding Waste Disposal Site

Remove, salvage and reinstall landscape rock at the following location.

Sta. 2+85 Rt. – 140 SF
Sta. 3+30 Lt. – 60 SF.
Sta. 14+25 Lt. TO 14+87 LT. – 290 SF

EROSION CONTROL - VEHICLE TRACKING CONTROL

1. CONSTRUCTION

The work covered by this section consists of furnishing all labor and equipment and the performance of all operations in connection with the construction of temporary vehicle tracking control on the project, complete and in accordance with the plans and standard plates. The Contractor shall be responsible for accomplishing the required construction work on this project in such a manner as to effectively minimize and control water pollution which might be caused by vehicular tracking of soil. It is intended that these features be maintained in appropriate functional condition whenever vehicles come or go from the construction site where there is dirt exposed.
In addition to the details shown in the plans, other provisions for controlling erosion may be incorporated.

2. MATERIALS

Aggregate base course shall be used for the temporary vehicular tracking control surface. If necessary 11/2" to 3" rock shall be used for stabilization underneath of the service gravel.

3. LABOR AND EQUIPMENT

All necessary labor and equipment shall be supplied to clean up any dirt or gravel off of the paved roadway surfaces at the end of each day. The contractor shall also remove any service gravel that has dirt mixed in with it from the project site when the tracking control is no longer necessary. Clean service gravel can be incorporated into the base material for the roadbed.

4. PAYMENT

Service gravel shall be paid for at the unit price bid in the contract for service gravel. Unit price for "Temporary Vehicle Tracking Control" shall be the amount paid for each site where the engineer requires the use of the temporary vehicle tracking control for however long it is needed. The Contractor will be charged $50.00 for each day that dirt is not cleaned off of the street after it is placed or tracked onto the pavement.

INLET SEDIMENT CONTROL

Refer to Standard Plates 734.10 - Drop inlet sediment filters.
Refer to Standard Plates 734.11. Drop inlet sediment filters.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	6	72
NOTES		

NOTES

DEWATERING AND EROSION CONTROL

Pumping required for the removal of surface water from the work area and/or depressions will be considered incidental to other pay items and not paid for separately. The Contractor shall be responsible for obtaining the required erosion control permits from the South Dakota Department of Environment and Natural Resources.

SITE MAINTENANCE

The Contractor is to keep the project site properly maintained and graded to drain storm water. No standing water is permitted on site. A penalty of $500/day will be assessed each day standing water is not removed from site. All regulations pertaining to Storm Water Pollution Prevention will be enforced. Direct discharge of storm water into the storm sewer system is not acceptable.

SEEDING

All grass areas disturbed by construction are to be hydromulched. Lump sum price will be for all areas disturbed by Contractor. Price shall also include the cost for fertilizer and fiber mulch, refer to SD-DOT Standard Specs 2015 Edition section 730. The following will be provided, by the Contractor, for use on the project unless an alternate is approved by the Engineer.

The estimated amount of area to be seeded: 15200 sf

SEED MIXTURE	PURE LIVE SEED/ 1000 FT. SQ.
Kentucky Bluegrass	1 pound
Perennial Rye Grass	1 pound
Park Kentucky Bluegrass	1 pound

FERTILIZER AND MULCHING

Fertilizer shall be a guaranteed analysis of 12-24-6. Rate applied shall be 3.2 lbs. per 1000 S.F. All areas shall be wood fiber mulched at a rate of 50 lbs./1000 S.F. with tackifier at a rate of 1.5lbs./1000 S.F. Method of payment will be incidental to the seeding lump sum bid price. Refer to SD-DOT Specs. 2015 Edition-section 731 and 732 for additional requirement for fertilizer and fiber mulch.

SALVAGING, STOCKPILING, AND PLACING TOPSOIL

Existing vegetation shall be salvaged, incorporated and placed with the topsoil as far as practicable.

The areas to be covered with topsoil to a depth of +/- 3 inches comprise all newly graded areas. Material shall be free of rock and debris.

The estimated amounts of salvaged topsoil required to cover the designated areas to the specified depth are as follows:

Table of Topsoil	Cu.Yd.
21st STREET	180

STEEL BAR INSTALLATION

The Contractor shall install Steel No. 5x24" epoxy coated deformed tie bars into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor steel bars in the drilled holes.

The steel bars shall be cut at the specified length by sawing and shall be free from burring or other deformations. Shearing will not be permitted.

Epoxy resin adhesive shall be of the type intended for horizontal applications, and shall conform to the requirements of ASTM C 881, Type 1, Grade 3 (equivalent to AASHTO M235, Type 1, Grade 3).

The diameter of the drilled holes in the existing concrete pavement for the steel bars shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Holes drilled into the existing concrete pavement shall be located at mid-depth of the slab and true and normal. The drilled holes shall be blown out with compressed air using a device that will reach to the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. If an epoxy pump is utilized, it shall be capable of metering the components at the manufacturers designated rate and be equipped with an automatic shut-off. The pump shall shut off when any of the components are not being metered at the designated rate. Fill the drilled holes 1/3 to 1/2 full of epoxy, or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent epoxy form running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping method will not be allowed.

Cost for the epoxy resin adhesive, steel bars, drilling of holes, applying the adhesives, installing the steel bars into the drilled holes and all other items incidental to the installation of the steel bars shall be included in the contract unit price per each for "Install Steel Bar in Concrete Pavement".

Steel bars shall be installed at the following locations:

LOCATION		#5 BARS EACH
0+72 TO 0+90 – 18' LT. TO 18' RT.		50
13+76 TO 14+12 – 32' LT. TO 52' LT.		36
	TOTAL	86

MANHOLE ADJUSTMENT

All costs for adjustment of the sewer manhole frame and lid to finished grade including removal and repair upper courses of brick or concrete, grouting, water-proofing and adjustment rings shall be incidental to the contract unit price per each for "Adjust Manhole".

All existing rims & covers will be replaced with Neenah R1733 frame and lid. The lids shall contain concealed pick holes and be equipped with a gasketed self-sealing type covers.

MANHOLE EXTERNAL FRAME SEAL

The furnishing and installing of the manhole frame seal shall be paid for under replace and adjust manhole frame and lid bid item. Full compensation for furnishing and installing of the complete manhole frame seal and all appurtenances necessary for the proper installation of the manhole frame seal for the manhole.(See section 210 of the City of Yankton standard specifications for sanitary sewer mains, service lines and appurtenances for approved products list.)

PRIVATE SPRINKLER SYSTEM

Private sprinkler systems are located within the construction limits. The City will notify all property owners about the expected construction and the procedures for preparing their systems for construction. When found, the Contractor shall notify the Engineer and take reasonable measures to minimize any damage to the system. It will be the responsibility of the City to pay the property owner's sprinkler contractor directly for repairs. The Contractor will be responsible for any damaged due to the Contractor's negligence.

The Contractor shall notify the Engineer when the sprinkler system can be restored and the City will coordinate with the property owner and sprinkler contractor. The system should be restored before seed or sod placement and the Contractor shall make reasonable accommodations to allow for the homeowner's sprinkler contractor to make final repairs and adjustments.

DETECTABLE WARNING PANEL

In order to comply with the Americans with Disabilities Act (ADA), detectable warning panels are to be placed at locations designated in the plan set. Detectable Warnings consist of a composite or polymer type of panel and should be installed into wet concrete. Surface applied products that are applied to cured concrete are not allowed. The detectable warnings shall be a brick red color for application in concrete curb ramps.

Current detectable warning panels approved for use and installation within the public right of way are:

Product	Manufacturer
Armor Tile Modular Paver Series	Engineered Plastics Inc. 300 International Drive, Suite 100 Williamsville, NY 14221 800-682-2525 http://www.armor-tile.com/
Detectable Warning Tile Composite Wet-Set	ADA Solutions, Inc. 323 Andover Street Wilmington, MA 01887 800-372-0519 http://www.adatile.com

Other detectable panels, meeting the necessary requirements may be allowed with written approval from the City Engineer's Office. In no case will the stamping of concrete be allowed as a method of creating the domes on the tactile warning panels.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	7	72
NOTES		

WATER MAIN GENERAL

The contractor shall provide new water main with a minimum of 6' of cover. The water main will be AWWA C-900. Adjust the depth of the new main to match existing main where connections to existing mains are shown on plans. Where the new main is to be connected to existing mains, the connection, sawing, pumping of water, labor and other items necessary to complete the tie are considered to be part of the bid item "cut and tie to existing main". Existing copper services will be connected to the new water main. Services will be replaced if line is galvanized, lead or smaller then 3/4 inch copper. Replace these service lines to ROW line behind new c&g or as directed by engineer with 1 inch copper and install a new curb stop and box. Services may be "hole hogged" with an underground piercing tool at no additional expense to the City of Yankton.

Contractor shall backfill all open trenches to the end of the pipe every night and appropriately protect the open hole with fencing. The Contractor shall have $200 per day deducted from the contract for each day that this is not done.

GENERAL ITEMS

All existing pipe and material removed by the contractor shall be appropriately disposed of by the contractor. All open ends of abandoned in place piping shall be plugged with concrete unless otherwise noted in plans. All abandoned valve boxes shall be removed to at least 2 feet below the ground surface and filled with granular material.

Salvageable material shall become the property of the City of Yankton, as directed by engineer. Abandoned valves shall have the valve boxes removed to a depth of not less than 2 feet below ground level. Removal of watermain, valves and fittings, necessary for the construction of the new items, shall be incidental to other project costs.

PVC WATER MAIN ENCASEMENT PIPE

PVC Water Main Encasement Pipe shall be installed at the locations shown on the plans and at locations determined by the Engineer on the project.

PVC Water Main Encasement Pipe shall be of water main quality, including joints, and be either ASTM D2241, Class 160 or Class 125 or AWWA C900 DR 25 or DR 18.

All costs for installation of the new water main in the encasement pipe, attachment of skids to the new water main, and casing seals at the ends of the encasement pipe shall be incidental to the contract price per foot for PVC Water Main Encasement Pipe.

WATERING

Water for compaction is incidental to other pay items. Water from city fire hydrants is to be metered and paid for by Contractor.

DEWATERING AND EROSION CONTROL

Pumping required for the removal of surface water from the work area and/or depressions will be considered incidental to other pay items and not paid for separately. The Contractor shall be responsible for complying with the erosion control installation and maintenance standards set by the South Dakota Department of Environment and Natural Resources.

STRUCTURE REMOVAL

The removal of existing pipe and manholes is to include the plugging of existing pipe if necessary with concrete and the removal of the structure. Castings and manhole covers removed are to be delivered to the city street shop.

EROSION CONTROL

The Contractor will provide erosion control for the street project. The contractor will provide any necessary erosion control for the watermain installation as an incidental project cost.

DISINFECTION, TESTING, AND OPERATION OF NEW MAIN

New water main shall be disinfected, have two passing bacteriological tests, at least 24 hours apart, and be pressure tested before the water main is put into service. The city will take the test sample and the contractor shall furnish a service line or other suitable location on the new pipe at which a sample can be collected. The contractor shall furnish the equipment necessary for the pressure test and shall conduct the test in the presence of someone from the City Engineering Department staff. New mains shall be installed and disinfected before any of the service lines are reconnected from the old main to the new main. New mains will not be put into operation without city approval.

POLYETHYLENE ENCASEMENT

All valves, fittings, and other ductile iron appurtenances and pipe are to be wrapped with 8 mil. thick polyethylene in accordance with AWWA C-105. This work is incidental to other pay items.

SLEEVES AND RETAINER GLANDS

The contractor shall furnish and install all clamps, ready rods, blocking and cradling necessary for the project as an incidental project cost.

Retainer glands are to be installed in addtion to blocking at all fittings (megalug series 2000pv). Retainer glands and sleeves will be paid for per each at the bid unit price.

VALVE BOX CENTERING ADAPTER

All valve boxes shall be equipped with a rubber boot/sleeve that covers and firmly holds the bottom of the valve box over the valve nut. (valve box adapter ii)

TRACER WIRE SYSTEM

The tracer wire system shall be installed with ductile iron water mains and with pvc water mains to the satisfaction of the engineer.

Tracer wire shall be no. 12 solid single strand Type TW or THHn, or approved equal.

The conductor shall be solid or stranded copper per ASTM B-1, B-3, or B-8. The ground rod shall be a 3/8-inch diameter, 60-inch long steel rod uniformly coated with metallically bonded electrolytic copper. Blackburn catalog no. 3755, or equal. The ground rod at the fire hydrant shall be of the same material except that the ground rod shall be 30 inches long.

Ground rod clamps shall be high strength, corrosion resistant copper alloy. Blackburn catalog no. G3, or equal.

Splice kits shall be Scotchlok DBY-Y connectors or equal.

The cost of the tracer wire system is considered to be a part of the cost of the water main installation.

CUT AND TIE TO EXISTING WATER MAIN

Where "Cut and Tie to Existing Water Main" is required, Contractor shall make the required connection at a time to be designated by the City. This time may be during nighttime hours. The exact time will vary from location to location to accommodate the needs of water users who will experience an outage.

All costs associated with work during this time period shall be incidental to the contract price per each for "Cut and Tie to Existing Water Main".

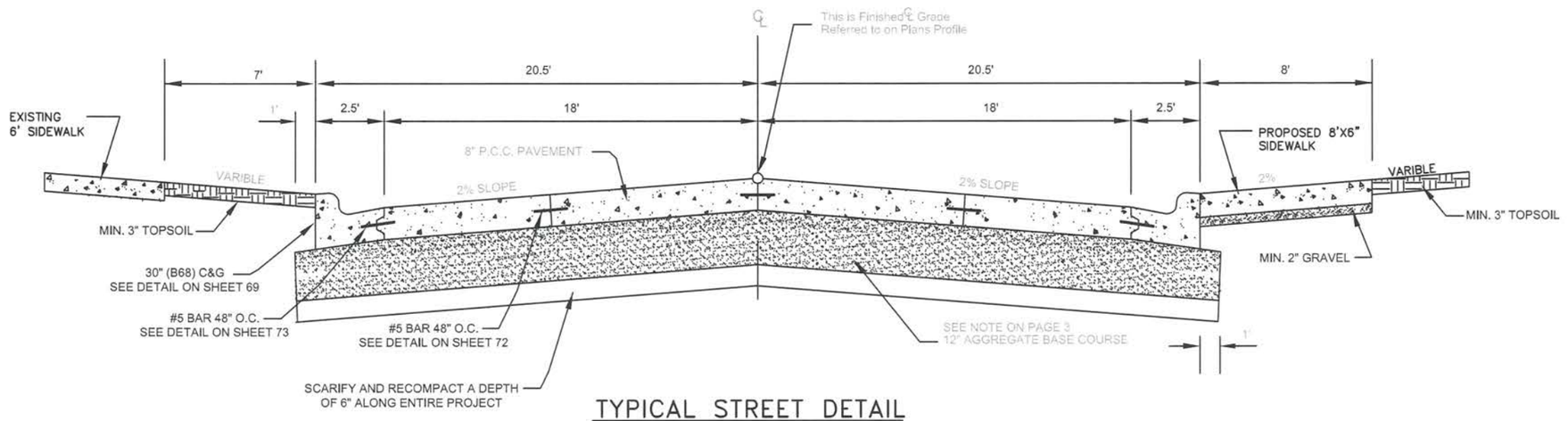
TRACER WIRE INSTALLATION

Tracer wire shall be installed with pvc and ductile iron water mains. The wire shall be installed along the lower quadrant of the pipe, but the pipe shall not be laid directly on the wire. Ground rods shall be installed adjacent to connections to existing piping and in the locations specified on the plans. The tracer wire shall be brought to each fire hydrant and connected to a 30" ground rod that extends up to the bolted flange just above the ground surface or a minimum distance of 3" above the ground surface. The ground rod shall be taped to the fire hydrant barrel in at least four locations below the ground surface. The tracer wire shall be spliced only if approved by the engineer and all underground splices shall be inspected by the engineer prior to backfilling. The tracer wire system is considered to be a part of the price bid for water mains.

The contractor shall be responsible for testing the tracer wire system for conductivity. Testing for conductivity shall be completed prior to finish surfacing activities. If the tracer wire does not function as intended, the contractor shall repair the system to the satisfaction of the engineer and the City will charge $50 per hour to retest the system with a minimum charge of $50.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	8	72
TYPICAL SECTION		

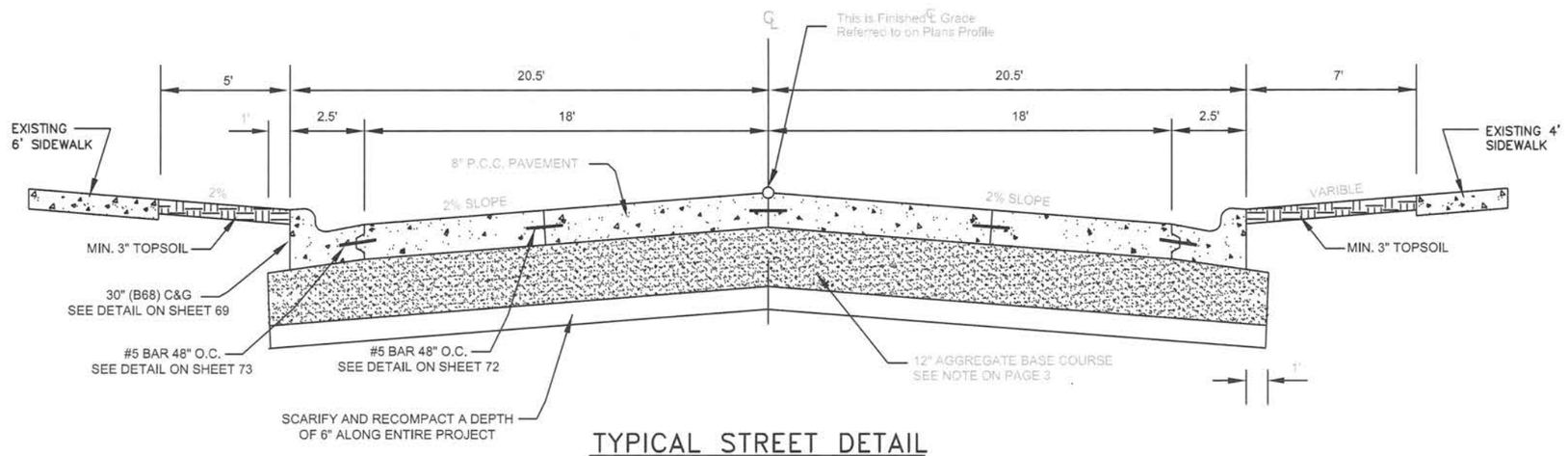
TYPICAL CROSS SECTIONS(n.t.s.) - 21ST STREET



TYPICAL STREET DETAIL

21ST STREET
BROADWAY AVE. TO ELM STREET

TYPICAL CROSS SECTIONS(n.t.s.) - 21ST STREET

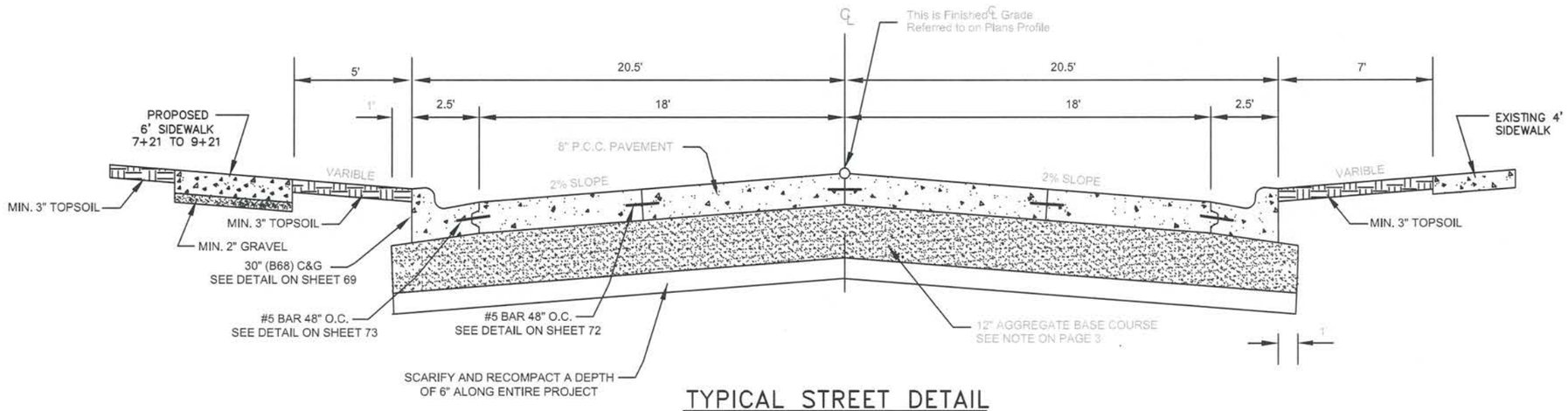


TYPICAL STREET DETAIL

21ST STREET
ELM STREET TO CEDAR STREET

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	9	72
TYPICAL SECTION		

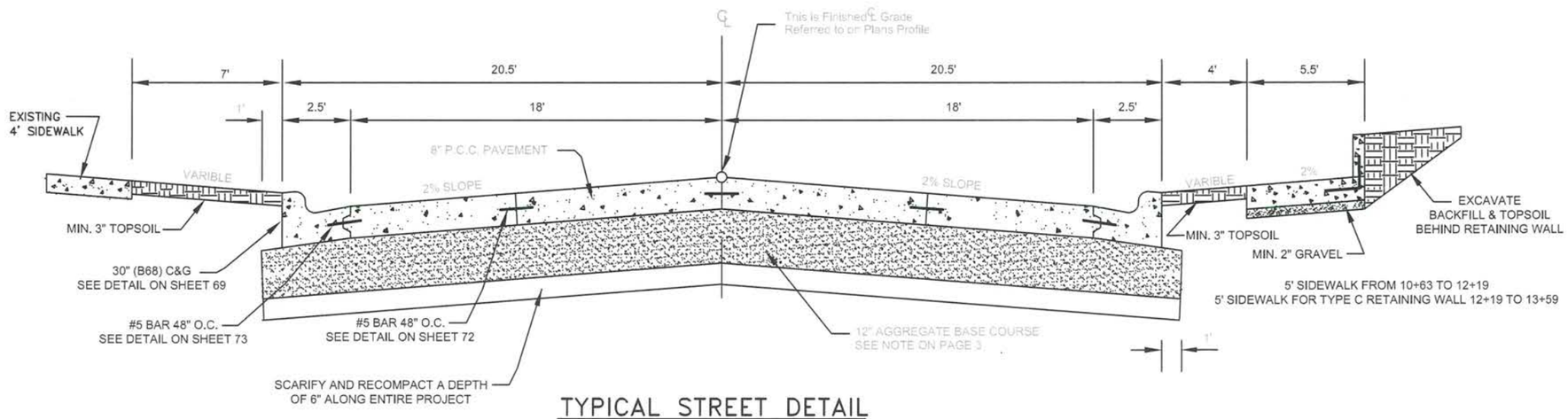
TYPICAL CROSS SECTIONS(n.t.s.) - 21ST STREET



TYPICAL STREET DETAIL

CEDAR STREET TO WALNUT STREET

TYPICAL CROSS SECTIONS(n.t.s.) - 21ST STREET



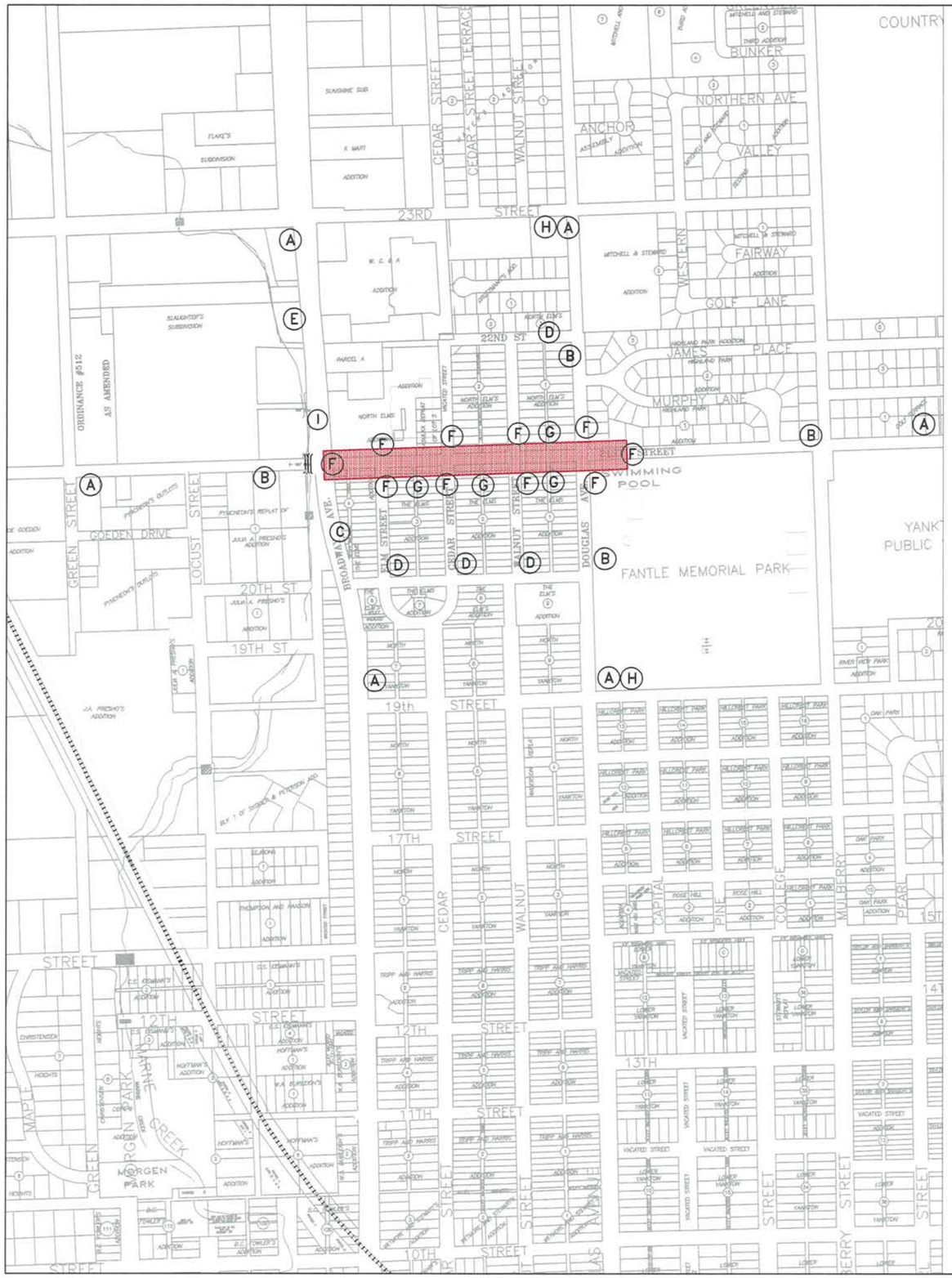
TYPICAL STREET DETAIL

WALNUT STREET TO DOUGLAS AVE.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	10	72
TRAFFIC CONTROL		

TRAFFIC CONTROL

LAYOUT FOR REMOVALS & PAVING OPERATIONS



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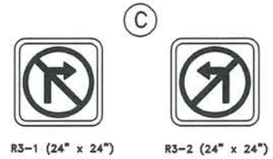

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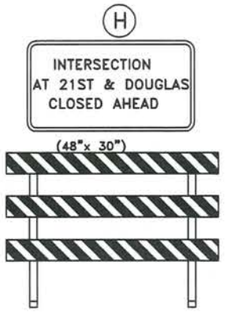

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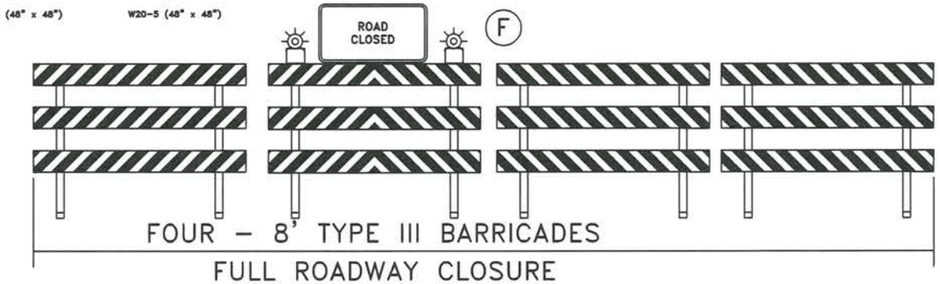


FOUR – 8' TYPE III BARRICADES

FULL ROADWAY CLOSURE

PEDESTRIAN TRAFFIC CONTROL

TRAFFIC CONTROL DEVICES FOR SIDEWALK CLOSURES AND PEDESTRIAN DETOURS SHALL BE PAID FOR UNDER TRAFFIC CONTROL MISC.
(SDDOT STANDARD PLATE #634.33 MAY BE USED AS A GUIDE FOR THESE SITUATIONS, SHOWN ON SHEET 66)

PROJECT AREA

SCALE: N.T.S.

ITEMIZED LIST FOR TRAFFIC CONTROL BID ITEM

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	SUB TOTAL
---	48" x 30"	INTERSECTION AT 21ST & DOUGLAS CLOSED ADHEAD	2	27	54
R11-2	48" x 30"	ROAD CLOSED	14	27	378
R11-4	60" x 30"	ROAD CLOSED TO THRU TRAFFIC	4	30	120
R3-1	24" x 24"	NO RIGHT TURN (SYMBOL)	1	15	15
R3-2	24" x 24"	NO LEFT TURN (SYMBOL)	1	15	15
W20-1	48" x 48"	ROAD WORK AHEAD	6	34	204
W20-5	48" x 48"	CENTER LANE CLOSED 200 FT	1	34	34
W9-3	48" x 48"	CENTER LANE CLOSED AHEAD	1	34	34
W20-3	48" x 48"	ROAD CLOSED AHEAD	4	34	136
---	---	TYPE III BARRICADES	400 L.F.	5 UNITS/L.F.	2000
				TOTAL	2990

LIST OF OTHER TRAFFIC CONTROLS FOR ROAD CONSTRUCTION

BID ITEM	DESCRIPTION	QUANTITY
TRAFFIC CONTROL MISC.	TYPE I & II BARRICADES, CONES, VERTICAL PANELS, DRUMS, BARRICADE WARNING LIGHTS, DELINEATORS. WATCHMAN, TUBULAR MARKERS, AND INSTALLATION OF CITY SIGNS.	LUMP SUM

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	11	72
TRAFFIC CONTROL		

TRAFFIC CONTROL

LAYOUT FOR REMOVALS, UTILITIES & PAVING OPERATIONS

PHASE 1 — AREA THAT CAN BE WORKED ON WHILE SCHOOL IS STILL IN SESSION. (SEE NOTE ON SHEET 4)

SCALE: N.T.S.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	12	72
EROSION CONTROL		

SCALE: N.T.S.

EROSION CONTROL

LEGEND

IP — INLET PROTECTION (TYPICAL) -SEE DETAIL SHEET 40

VEHICLE TRACKING CONTROL (TYPICAL) -SEE DETAIL SHEET 39
LOCATION TO BE DETERMINED BY ENGINEER

SILT FENCE - SEE DETAIL SHEET 39
SILT FENCE IS INCLUDED IN QUANTITIES FOR USE AT THE DISCRETION OF THE ENGINEER.

PROJECT AREA

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	13	72
SWPPP 1		

STORM WATER POLLUTION PREVENTION PLAN

*(The numbers right of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES)*

❖ **SITE DESCRIPTION (4.2 1)**

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
  - ☐ Clearing and grubbing
  - ☐ Excavation/borrow
  - ☒ Grading and shaping
  - ☐ Filling
  - ☒ Cutting and filling
  - ☐ Other (describe):
- **Total Project Area** 2.3 acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 1.8 acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 5%
- **Soil Properties:** AASHTO Soil Classification **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Missouri River **(4.2 1.e.)**

❖ **ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)**

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)

- **Special sequencing requirements (**see sheet).
- **Install stabilized construction entrance(s).**
- **Install perimeter protection where runoff sheets from the site.**
- **Install channel and ditch bottom protection.**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas.**
- **Install utilities, storm sewers, curb and gutter.**
- **Install inlet and culvert protection after completing storm drainage and other utility installations.**
- **Complete final grading.**
- **Complete final paving and sealing of concrete.**
- **Complete traffic control installation and protection devices.**
- **Reseed areas disturbed by removal activities**.

❖ **EROSION AND SEDIMENT CONTROLS (4.2 2.a.(1)(a)-(f))**

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
  - ☒ Temporary or Permanent Seeding
  - ☐ Sodding
  - ☐ Planting
  - ☐ Mulching (Straw or Cellulose Fiber)
  - ☐ Erosion Control Blankets or Mats
  - ☐ Vegetation Buffer Strips
  - ☐ Roughened Surface (e.g. tracking)
  - ☐ Gabions-Gabion Mattress
  - ☐ Other
- **Structural Temporary Erosion and Sediment Controls**
  - ☒ Silt Fence
  - ☐ Straw Bale Check
  - ☐ Temporary Berm
  - ☐ Temporary Slope Drain
  - ☐ Straw Wattles or Rolls
  - ☐ Diversion Channels/Swales
  - ☐ Channel Liners (TRM)
  - ☐ Stone Rip Rap Sheet
  - ☐ Rock Check Dams
  - ☐ Sediment Traps/Basins
  - ☒ Inlet Protection
  - ☐ Outlet Protection
  - ☐ Surface Inlet Protection
  - ☐ Curb Inlet Protection
  - ☐ Stabilized Construction Entrances
  - ☐ Other
- **Wetland Avoidance**

  Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☐ No ☒ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.
- **Storm Water Management (4.2 2.b., (1) and (2))**

  Storm water management will be handled by temporary controls outlined in Section 3 above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.
- **Other Storm Water Controls (4.2 2.c., (1) and (2))**
  - **Waste Disposal**

    All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.
  - **Hazardous Waste**

    All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.
  - **Sanitary Waste**

    Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

❖ **Maintenance and Inspection (4.2 3. and 4.2 4.)**

- **Maintenance and Inspection Practices**
  - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
  - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- **Maintenance and Inspection Practices(Continued)**
  - Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
  - Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
  - Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
  - All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
  - Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
  - The SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

❖ **Non-Storm Water Discharges (3.0)**

The following non-storm water discharges are anticipated during the course of this project (check all that apply).

- ☒ Discharges from water line flushing.
- ☒ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- ☒ Uncontaminated ground water associated with dewatering activities.

❖ **Materials Inventory (4.2. 2.c.(2))**

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).

- ☒ Concrete and Portland Cement
- ☐ Detergents
- ☐ Paints
- ☐ Metals
- ☒ Bituminous Materials
- ☐ Petroleum Based Products
- ☐ Cleaning Solvents
- ☐ Wood
- ☒ Cure
- ☐ Texture
- ☒ Chemical Fertilizers
- ☐ Other

SWPPP

❖ **(4.2 2.c.(2))**

➢ **Material Management Spill Prevention**

- Housekeeping
  - Only needed products will be stored on-site by the contractor.
  - Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
  - Products must be stored in original containers and labeled.
  - Material mixing will be conducted in accordance with the manufacturer's recommendations.
  - When possible, all products will be completely used before properly disposing of the container off site.
  - The manufacturer's directions for disposal of materials and containers will be followed.
  - The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
  - Dust generated will be controlled in an environmentally safe manner.
  - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

- Hazardous Materials
  - Products will be kept in original containers unless the container is not resealable.
  - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
  - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
  - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
  - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
  - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➢ **Product Specific Practices (6.8)**

- Petroleum Products
  All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- Fertilizers
  Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

➢ **Product Specific Practices (6.8) (Continued)**

- Paints
  All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.
- Concrete Trucks
  Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

➢ **Spill Control Practices (4.2 2 c.(2))**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as booms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➢ **Spill Response (4.2 2 c.(2))**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.

➢ **Spill Response (4.2 2 c.(2)) (Continued)**

- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
- Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

❖ **Spill Notification**

In the event of a spill, the contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

➢ A reportable spill is a quantity of 25 gallons or more or any spill of oil which: 1) violates water quality standards, 2) produces a "sheen" on a surface water, or 3) causes a sludge or emulsion must be reported immediately to the National Response Center .

➢ Any spill of oil or hazardous substance to waters of the state must be reported immediately by telephone to the SD DENR.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

SWPPP

❖ CERTIFICATIONS

➢ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➢ **City of Yankton**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Authorized Signature. (See the General Permit, Section 6.7.1.C.)

➢ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract and at least 15 days prior to the beginning of construction. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Authorized Signature. (See the General Permit, Section 6.7.1.a .or b.)

❖ CONTACT INFORMATION

➢ **Contractor Information**:

- Prime Contractor Name:
- Contractor Contact Name:
- Address:
- Address:
- City: State: Zip:
- Office Phone: Field: Cell: Fax:

➢ **City Project Engineer**

- Name: Brad Moser
- Business Address: 416 Walnut St.
- Job Office Location
- City: Yankton State: SD Zip: 57078
- Office Phone: 605 668-5255 Field: Cell: Fax:

➢ **SD DENR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SD DENR Contact for Hazardous Materials.**

- (605) 773-3153

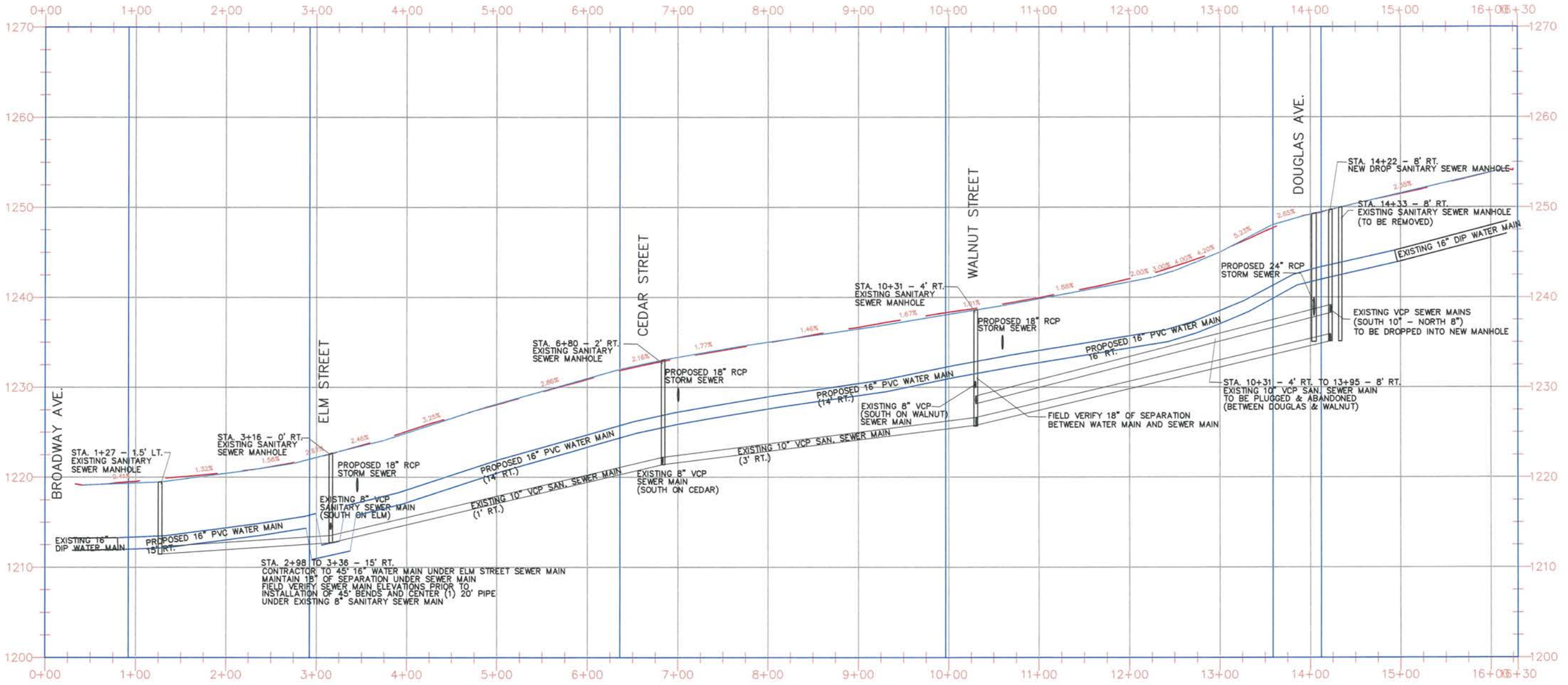
➢ **National Response Center Hotline**

- (800) 424-8802.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	16	72
PROFILE		

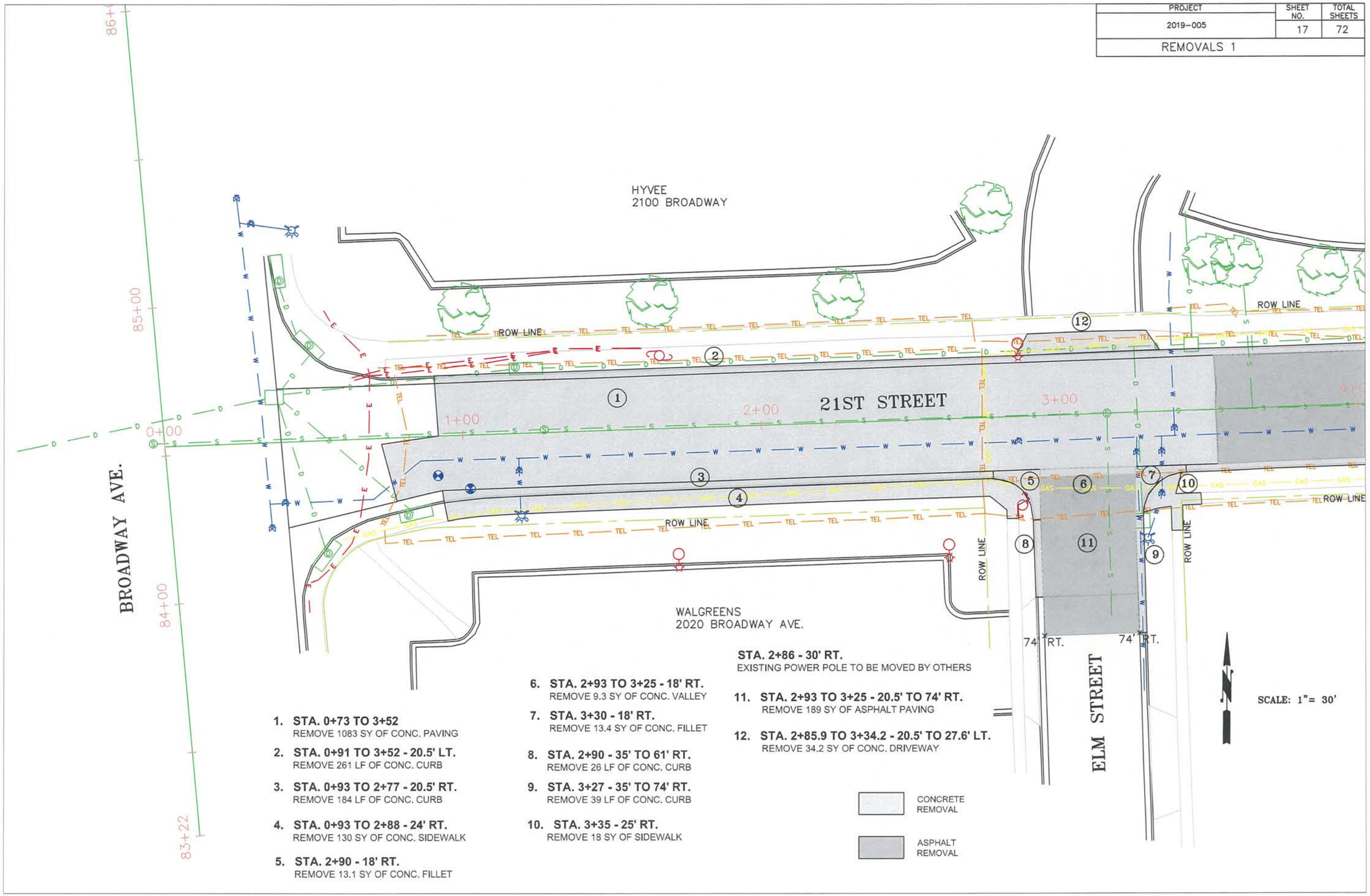
21st street PROFILE

Station



1+00	2+00	3+00	4+00	5+00	6+00	7+00	8+00	9+00	10+00	11+00	12+00	13+00	14+00	15+00	16+00
1219.55 / 1219.368	1220.50 / 1220.434	1222.21 / 1222.202	1225.10 / 1224.914	1228.06 / 1228.109	1230.89 / 1230.970	1233.21 / 1233.325	1234.95 / 1235.014	1236.67 / 1236.470	1238.34 / 1238.098	1239.95 / 1239.816	1242.07 / 1241.700	1245.13 / 1245.000	1249.19 / 1249.184	1251.48 / 1251.533	1253.87 / 1253.882

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	17	72
REMOVALS 1		



1. **STA. 0+73 TO 3+52**
   REMOVE 1083 SY OF CONC. PAVING
2. **STA. 0+91 TO 3+52 - 20.5' LT.**
   REMOVE 261 LF OF CONC. CURB
3. **STA. 0+93 TO 2+77 - 20.5' RT.**
   REMOVE 184 LF OF CONC. CURB
4. **STA. 0+93 TO 2+88 - 24' RT.**
   REMOVE 130 SY OF CONC. SIDEWALK
5. **STA. 2+90 - 18' RT.**
   REMOVE 13.1 SY OF CONC. FILLET
6. **STA. 2+93 TO 3+25 - 18' RT.**
   REMOVE 9.3 SY OF CONC. VALLEY
7. **STA. 3+30 - 18' RT.**
   REMOVE 13.4 SY OF CONC. FILLET
8. **STA. 2+90 - 35' TO 61' RT.**
   REMOVE 26 LF OF CONC. CURB
9. **STA. 3+27 - 35' TO 74' RT.**
   REMOVE 39 LF OF CONC. CURB
10. **STA. 3+35 - 25' RT.**
    REMOVE 18 SY OF SIDEWALK

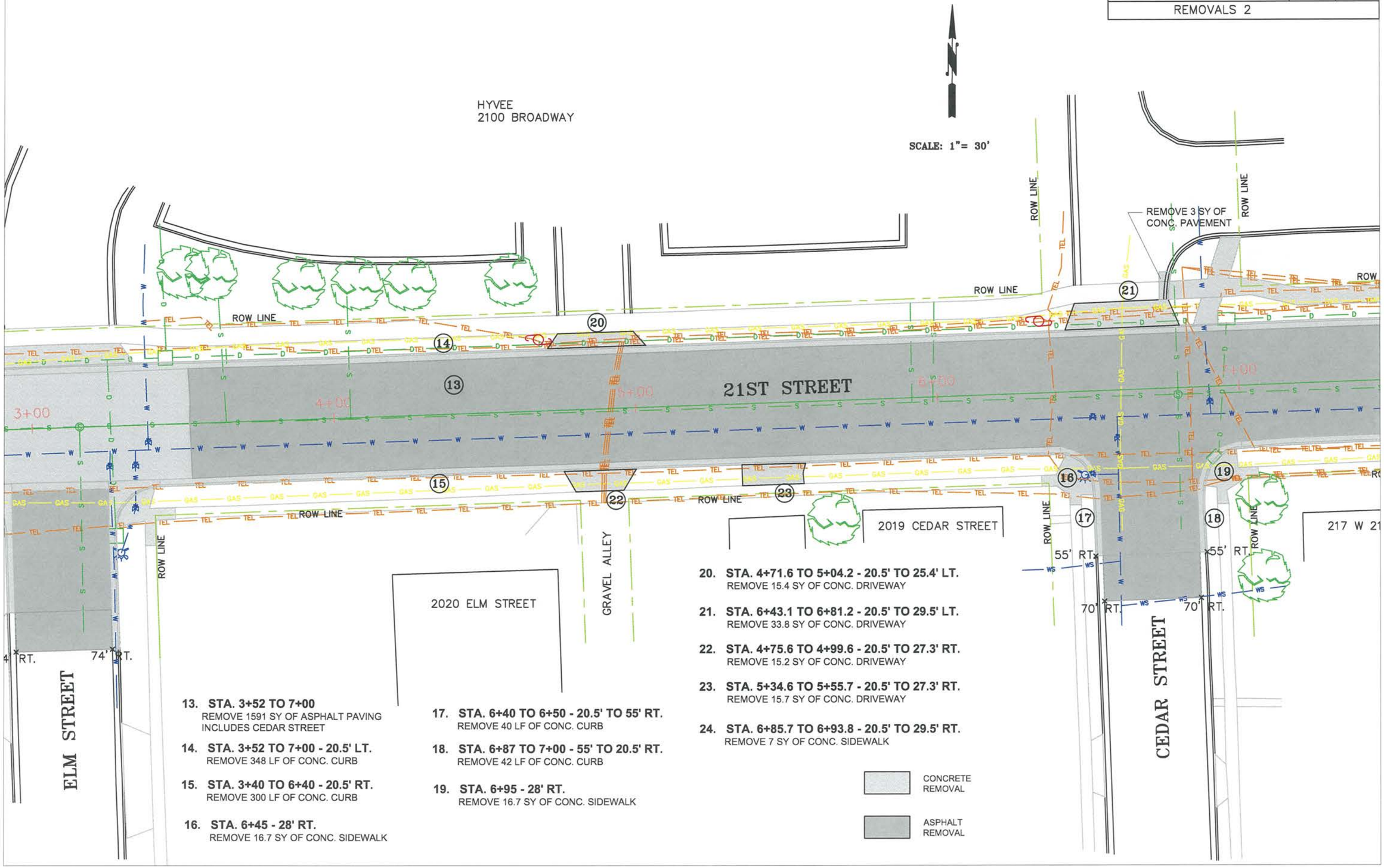
STA. 2+86 - 30' RT.
EXISTING POWER POLE TO BE MOVED BY OTHERS

11. **STA. 2+93 TO 3+25 - 20.5' TO 74' RT.**
    REMOVE 189 SY OF ASPHALT PAVING
12. **STA. 2+85.9 TO 3+34.2 - 20.5' TO 27.6' LT.**
    REMOVE 34.2 SY OF CONC. DRIVEWAY

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	18	72
REMOVALS 2		

HYVEE
2100 BROADWAY

SCALE: 1"= 30'



13. **STA. 3+52 TO 7+00**
REMOVE 1591 SY OF ASPHALT PAVING
INCLUDES CEDAR STREET

14. **STA. 3+52 TO 7+00 - 20.5' LT.**
REMOVE 348 LF OF CONC. CURB

15. **STA. 3+40 TO 6+40 - 20.5' RT.**
REMOVE 300 LF OF CONC. CURB

16. **STA. 6+45 - 28' RT.**
REMOVE 16.7 SY OF CONC. SIDEWALK

17. **STA. 6+40 TO 6+50 - 20.5' TO 55' RT.**
REMOVE 40 LF OF CONC. CURB

18. **STA. 6+87 TO 7+00 - 55' TO 20.5' RT.**
REMOVE 42 LF OF CONC. CURB

19. **STA. 6+95 - 28' RT.**
REMOVE 16.7 SY OF CONC. SIDEWALK

20. **STA. 4+71.6 TO 5+04.2 - 20.5' TO 25.4' LT.**
REMOVE 15.4 SY OF CONC. DRIVEWAY

21. **STA. 6+43.1 TO 6+81.2 - 20.5' TO 29.5' LT.**
REMOVE 33.8 SY OF CONC. DRIVEWAY

22. **STA. 4+75.6 TO 4+99.6 - 20.5' TO 27.3' RT.**
REMOVE 15.2 SY OF CONC. DRIVEWAY

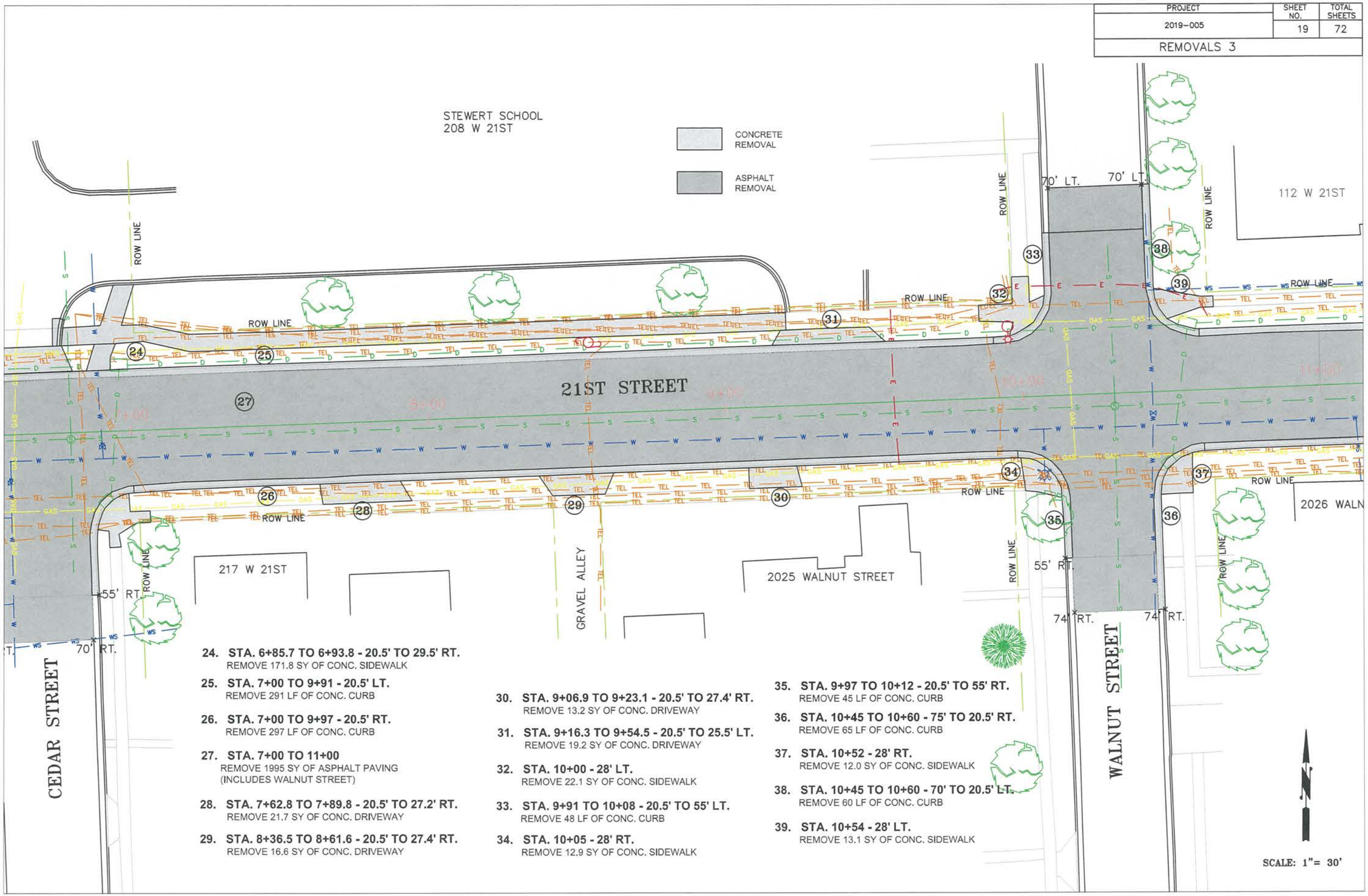
23. **STA. 5+34.6 TO 5+55.7 - 20.5' TO 27.3' RT.**
REMOVE 15.7 SY OF CONC. DRIVEWAY

24. **STA. 6+85.7 TO 6+93.8 - 20.5' TO 29.5' RT.**
REMOVE 7 SY OF CONC. SIDEWALK

CONCRETE REMOVAL

ASPHALT REMOVAL

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	19	72
REMOVALS 3		



24. **STA. 6+85.7 TO 6+93.8 - 20.5' TO 29.5' RT.**
REMOVE 171.8 SY OF CONC. SIDEWALK

25. **STA. 7+00 TO 9+91 - 20.5' LT.**
REMOVE 291 LF OF CONC. CURB

26. **STA. 7+00 TO 9+97 - 20.5' RT.**
REMOVE 297 LF OF CONC. CURB

27. **STA. 7+00 TO 11+00**
REMOVE 1995 SY OF ASPHALT PAVING
(INCLUDES WALNUT STREET)

28. **STA. 7+62.8 TO 7+89.8 - 20.5' TO 27.2' RT.**
REMOVE 21.7 SY OF CONC. DRIVEWAY

29. **STA. 8+36.5 TO 8+61.6 - 20.5' TO 27.4' RT.**
REMOVE 16.6 SY OF CONC. DRIVEWAY

30. **STA. 9+06.9 TO 9+23.1 - 20.5' TO 27.4' RT.**
REMOVE 13.2 SY OF CONC. DRIVEWAY

31. **STA. 9+16.3 TO 9+54.5 - 20.5' TO 25.5' LT.**
REMOVE 19.2 SY OF CONC. DRIVEWAY

32. **STA. 10+00 - 28' LT.**
REMOVE 22.1 SY OF CONC. SIDEWALK

33. **STA. 9+91 TO 10+08 - 20.5' TO 55' LT.**
REMOVE 48 LF OF CONC. CURB

34. **STA. 10+05 - 28' RT.**
REMOVE 12.9 SY OF CONC. SIDEWALK

35. **STA. 9+97 TO 10+12 - 20.5' TO 55' RT.**
REMOVE 45 LF OF CONC. CURB

36. **STA. 10+45 TO 10+60 - 75' TO 20.5' RT.**
REMOVE 65 LF OF CONC. CURB

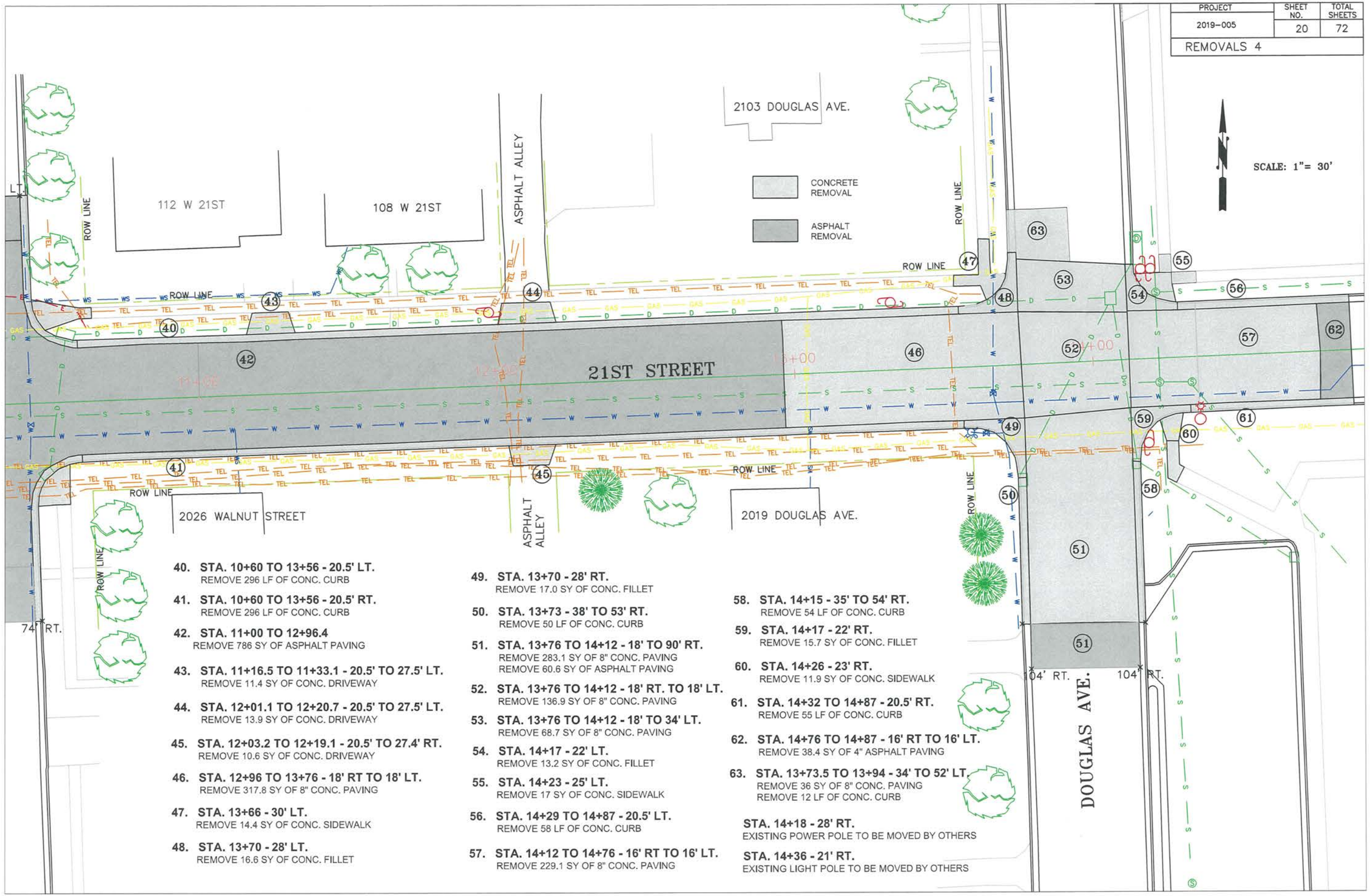
37. **STA. 10+52 - 28' RT.**
REMOVE 12.0 SY OF CONC. SIDEWALK

38. **STA. 10+45 TO 10+60 - 70' TO 20.5' LT.**
REMOVE 60 LF OF CONC. CURB

39. **STA. 10+54 - 28' LT.**
REMOVE 13.1 SY OF CONC. SIDEWALK

SCALE: 1"= 30'

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	20	72
REMOVALS 4		



40. STA. 10+60 TO 13+56 - 20.5' LT.
REMOVE 296 LF OF CONC. CURB

41. STA. 10+60 TO 13+56 - 20.5' RT.
REMOVE 296 LF OF CONC. CURB

42. STA. 11+00 TO 12+96.4
REMOVE 786 SY OF ASPHALT PAVING

43. STA. 11+16.5 TO 11+33.1 - 20.5' TO 27.5' LT.
REMOVE 11.4 SY OF CONC. DRIVEWAY

44. STA. 12+01.1 TO 12+20.7 - 20.5' TO 27.5' LT.
REMOVE 13.9 SY OF CONC. DRIVEWAY

45. STA. 12+03.2 TO 12+19.1 - 20.5' TO 27.4' RT.
REMOVE 10.6 SY OF CONC. DRIVEWAY

46. STA. 12+96 TO 13+76 - 18' RT TO 18' LT.
REMOVE 317.8 SY OF 8" CONC. PAVING

47. STA. 13+66 - 30' LT.
REMOVE 14.4 SY OF CONC. SIDEWALK

48. STA. 13+70 - 28' LT.
REMOVE 16.6 SY OF CONC. FILLET

49. STA. 13+70 - 28' RT.
REMOVE 17.0 SY OF CONC. FILLET

50. STA. 13+73 - 38' TO 53' RT.
REMOVE 50 LF OF CONC. CURB

51. STA. 13+76 TO 14+12 - 18' TO 90' RT.
REMOVE 283.1 SY OF 8" CONC. PAVING
REMOVE 60.6 SY OF ASPHALT PAVING

52. STA. 13+76 TO 14+12 - 18' RT. TO 18' LT.
REMOVE 136.9 SY OF 8" CONC. PAVING

53. STA. 13+76 TO 14+12 - 18' TO 34' LT.
REMOVE 68.7 SY OF 8" CONC. PAVING

54. STA. 14+17 - 22' LT.
REMOVE 13.2 SY OF CONC. FILLET

55. STA. 14+23 - 25' LT.
REMOVE 17 SY OF CONC. SIDEWALK

56. STA. 14+29 TO 14+87 - 20.5' LT.
REMOVE 58 LF OF CONC. CURB

57. STA. 14+12 TO 14+76 - 16' RT TO 16' LT.
REMOVE 229.1 SY OF 8" CONC. PAVING

58. STA. 14+15 - 35' TO 54' RT.
REMOVE 54 LF OF CONC. CURB

59. STA. 14+17 - 22' RT.
REMOVE 15.7 SY OF CONC. FILLET

60. STA. 14+26 - 23' RT.
REMOVE 11.9 SY OF CONC. SIDEWALK

61. STA. 14+32 TO 14+87 - 20.5' RT.
REMOVE 55 LF OF CONC. CURB

62. STA. 14+76 TO 14+87 - 16' RT TO 16' LT.
REMOVE 38.4 SY OF 4" ASPHALT PAVING

63. STA. 13+73.5 TO 13+94 - 34' TO 52' LT.
REMOVE 36 SY OF 8" CONC. PAVING
REMOVE 12 LF OF CONC. CURB

STA. 14+18 - 28' RT.
EXISTING POWER POLE TO BE MOVED BY OTHERS

STA. 14+36 - 21' RT.
EXISTING LIGHT POLE TO BE MOVED BY OTHERS

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	21	72
PAVING 1		

ALIGNMENT CONTROL DATA

21st STREET ALIGNMENT
0+00 – Northing 17056.3255 Easting 55387.9104
0+00 to 0+91.88 – N87°43'40"E – 91.878'
0+91.88 to 2+92.64 – N88°06'13"E – 200.765'
2+92.64 to 6+35.96 – N87°59'46"E – 343.317'
6+35.96 to 9+96.56 – N87°54'32"E – 360.600'
9+96.56 to 13+58.62 – N87°53'58"E – 362.062'
13+58.62 to 14+12.18 – N87°27'02"E – 53.561'
14+12.18 to 16+30.31 – N87°40'35"E – 218.131'
16+30.31 – Northing 17116.2710 Easting 57017.1171

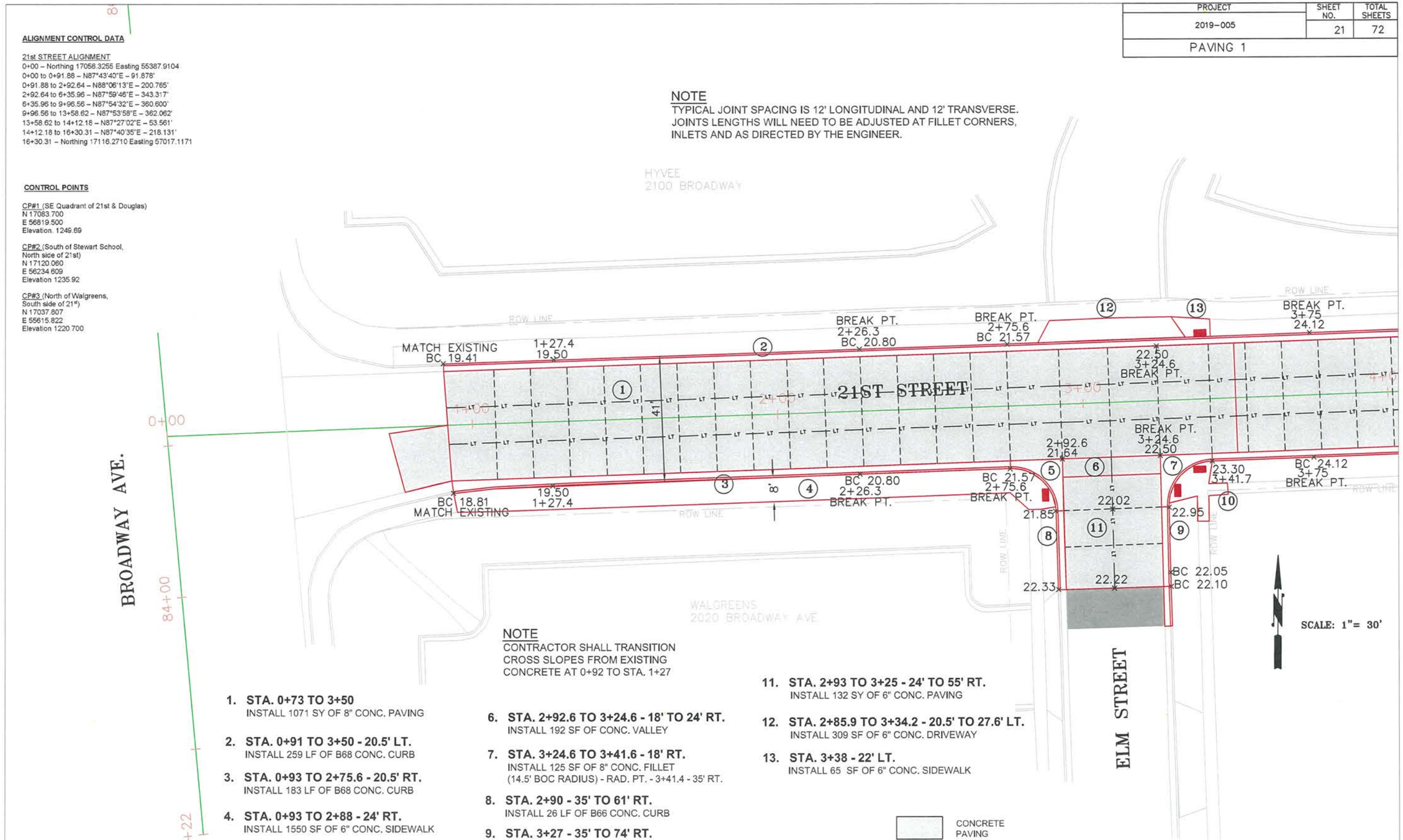
CONTROL POINTS

CP#1 (SE Quadrant of 21st & Douglas)
N 17083.700
E 56819.500
Elevation. 1249.69

CP#2 (South of Stewart School,
North side of 21st)
N 17120.060
E 56234.609
Elevation 1235.92

CP#3 (North of Walgreens,
South side of 21st)
N 17037.807
E 55615.822
Elevation 1220.700

NOTE
TYPICAL JOINT SPACING IS 12' LONGITUDINAL AND 12' TRANSVERSE. JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS, INLETS AND AS DIRECTED BY THE ENGINEER.



NOTE
CONTRACTOR SHALL TRANSITION CROSS SLOPES FROM EXISTING CONCRETE AT 0+92 TO STA. 1+27

1. **STA. 0+73 TO 3+50**
   INSTALL 1071 SY OF 8" CONC. PAVING
2. **STA. 0+91 TO 3+50 - 20.5' LT.**
   INSTALL 259 LF OF B68 CONC. CURB
3. **STA. 0+93 TO 2+75.6 - 20.5' RT.**
   INSTALL 183 LF OF B68 CONC. CURB
4. **STA. 0+93 TO 2+88 - 24' RT.**
   INSTALL 1550 SF OF 6" CONC. SIDEWALK
5. **STA. 2+75.6 TO 2+92.6 - 18' RT.**
   INSTALL 125 SF OF 8" CONC. FILLET (14.5' BOC RADIUS) - RAD. PT. - 2+75.5 - 35' RT.
6. **STA. 2+92.6 TO 3+24.6 - 18' TO 24' RT.**
   INSTALL 192 SF OF CONC. VALLEY
7. **STA. 3+24.6 TO 3+41.6 - 18' RT.**
   INSTALL 125 SF OF 8" CONC. FILLET (14.5' BOC RADIUS) - RAD. PT. - 3+41.4 - 35' RT.
8. **STA. 2+90 - 35' TO 61' RT.**
   INSTALL 26 LF OF B66 CONC. CURB
9. **STA. 3+27 - 35' TO 74' RT.**
   INSTALL 39 LF OF B66 CONC. CURB
10. **STA. 3+35 - 25' RT.**
    INSTALL 174 SF OF 6" CONC. SIDEWALK
11. **STA. 2+93 TO 3+25 - 24' TO 55' RT.**
    INSTALL 132 SY OF 6" CONC. PAVING
12. **STA. 2+85.9 TO 3+34.2 - 20.5' TO 27.6' LT.**
    INSTALL 309 SF OF 6" CONC. DRIVEWAY
13. **STA. 3+38 - 22' LT.**
    INSTALL 65 SF OF 6" CONC. SIDEWALK

CONCRETE PAVING

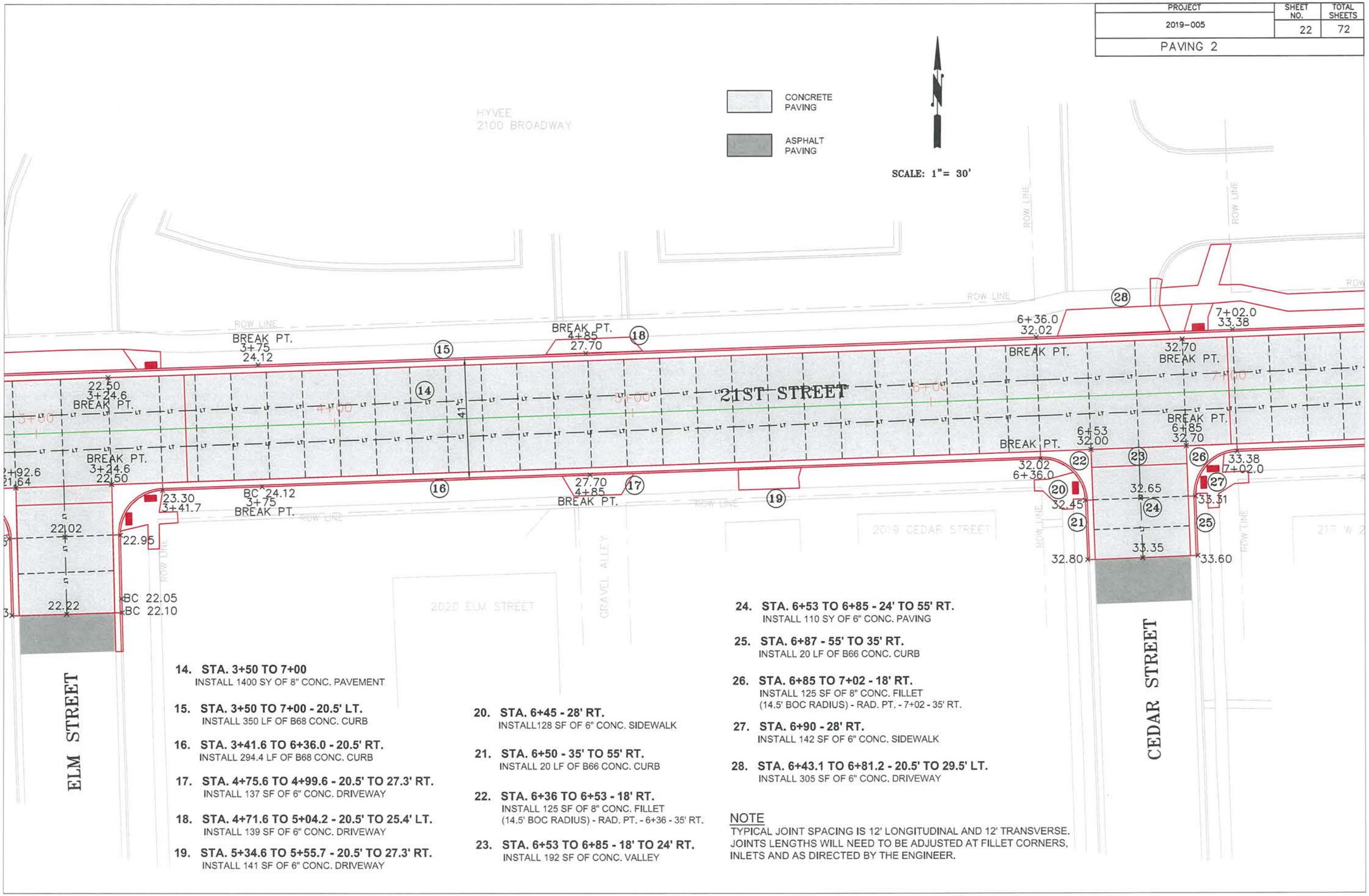
ASPHALT PAVING

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	22	72
PAVING 2		

CONCRETE PAVING

ASPHALT PAVING

SCALE: 1"= 30'



14. **STA. 3+50 TO 7+00**
INSTALL 1400 SY OF 8" CONC. PAVEMENT

15. **STA. 3+50 TO 7+00 - 20.5' LT.**
INSTALL 350 LF OF B68 CONC. CURB

16. **STA. 3+41.6 TO 6+36.0 - 20.5' RT.**
INSTALL 294.4 LF OF B68 CONC. CURB

17. **STA. 4+75.6 TO 4+99.6 - 20.5' TO 27.3' RT.**
INSTALL 137 SF OF 6" CONC. DRIVEWAY

18. **STA. 4+71.6 TO 5+04.2 - 20.5' TO 25.4' LT.**
INSTALL 139 SF OF 6" CONC. DRIVEWAY

19. **STA. 5+34.6 TO 5+55.7 - 20.5' TO 27.3' RT.**
INSTALL 141 SF OF 6" CONC. DRIVEWAY

20. **STA. 6+45 - 28' RT.**
INSTALL128 SF OF 6" CONC. SIDEWALK

21. **STA. 6+50 - 35' TO 55' RT.**
INSTALL 20 LF OF B66 CONC. CURB

22. **STA. 6+36 TO 6+53 - 18' RT.**
INSTALL 125 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. - 6+36 - 35' RT.

23. **STA. 6+53 TO 6+85 - 18' TO 24' RT.**
INSTALL 192 SF OF CONC. VALLEY

24. **STA. 6+53 TO 6+85 - 24' TO 55' RT.**
INSTALL 110 SY OF 6" CONC. PAVING

25. **STA. 6+87 - 55' TO 35' RT.**
INSTALL 20 LF OF B66 CONC. CURB

26. **STA. 6+85 TO 7+02 - 18' RT.**
INSTALL 125 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. - 7+02 - 35' RT.

27. **STA. 6+90 - 28' RT.**
INSTALL 142 SF OF 6" CONC. SIDEWALK

28. **STA. 6+43.1 TO 6+81.2 - 20.5' TO 29.5' LT.**
INSTALL 305 SF OF 6" CONC. DRIVEWAY

NOTE
TYPICAL JOINT SPACING IS 12' LONGITUDINAL AND 12' TRANSVERSE. JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS, INLETS AND AS DIRECTED BY THE ENGINEER.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	23	72
PAVING 3		

SCALE: 1"= 30'

CONCRETE PAVING

ASPHALT PAVING

NOTE
TYPICAL JOINT SPACING IS 12' LONGITUDINAL AND 12' TRANSVERSE. JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS, INLETS AND AS DIRECTED BY THE ENGINEER.

STEWERT SCHOOL
208 W 21ST

112 W 21ST

2026 WAL

217 W 21ST

2025 WALNUT STREET

21ST STREET

CEDAR STREET

WALNUT STREET

GRAVEL ALLEY

ROW LINE

7+02.0
33.38

32.70
BREAK PT.

6+85
32.70
BREAK PT.

33.38
7+02.0

32.65

33.31

33.35

33.60

7+75
BC 34.67
BREAK PT.

35.76
8+50

9+19.2
BC 36.77
BREAK PT.

9+93.9
BC 38.02

38.65

38.96

39.12

38.45

38.33

38.96

10+59.9
BC 39.08

37.64
BREAK PT.

37.91

38.43

38.70
BREAK PT.

9+97.5
37.70

37.97

38.42

38.69
BREAK PT.

BC 38.08

38.58

38.45

39.07

BC 39.07

38.77

39.14

39.37

5'

29. STA. 6+75 TO 9+21 - LT.
INSTALL 1525 SF OF 6" CONC. SIDEWALK

30. STA. 7+00 TO 9+93.9 - 20.5' LT.
INSTALL 294 LF OF B68 CONC. CURB

31. STA. 7+00 TO 9+97.5 - 20.5' RT.
INSTALL 298 LF OF B68 CONC. CURB

32. STA. 7+00 TO 11+00
INSTALL 1600 SY OF 8" CONC. PAVING

33. STA. 7+62.8 TO 7+89.8 - 20.5' TO 27.2' RT.
INSTALL 195 SF OF 6" CONC. DRIVEWAY

34. STA. 8+36.5 TO 8+61.6 - 20.5' TO 27.4' RT.
INSTALL 150 SF OF 6" CONC. DRIVEWAY

35. STA. 9+06.9 TO 9+23.1 - 20.5' TO 27.4' RT.
INSTALL 120 SF OF 6" CONC. DRIVEWAY

36. STA. 9+16.3 TO 9+54.5 - 20.5' TO 25.5' LT.
INSTALL 170 SF OF 6" CONC. DRIVEWAY

37. STA. 10+00 - 28' LT.
INSTALL 216 SF OF 6" CONC. SIDEWALK

38. STA. 10+08 - 35' TO 70' LT.
INSTALL 35 LF OF B66 CONC. CURB

39. STA. 9+93.9 TO 10+10.9 - 18' LT.
INSTALL 125 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. - 9+93.9 - 35' LT.

40. STA. 10+10.9 TO 10+42.9 - 18' TO 24' LT.
INSTALL 192 SF OF 8" CONC. VALLEY GUTTER

41. STA. 10+10.9 TO 10+42.9 - 24' TO 55' LT.
INSTALL 109.8 SY OF 6" CONC. PAVING
INSTALL 53 SY OF 4" ASPHALT PAVING

42. STA. 10+45 - 35' TO 70' LT.
INSTALL 35 LF OF B66 CONC. CURB

43. STA. 10+55 - 28' LT.
INSTALL 114 SF OF 6" CONC. SIDEWALK

44. STA. 10+42.9 TO 10+59.9 - 18' LT.
INSTALL 125 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. 10+59.9 - 35' LT.

45. STA. 10+05 - 28' RT.
INSTALL 114 SF OF CONC. SIDEWALK

46. STA. 9+97.5 TO 10+14.5 - 18' RT.
INSTALL 125 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. - 9+97.5 - 35' RT.

47. STA. 10+12 - 35' TO 74' RT.
INSTALL 39 LF OF B66 CONC. CURB

48. STA. 10+14.5 TO 10+42.5 - 24' TO 73.5' RT.
INSTALL 96.6 SY OF 6" CONC. PAVING
INSTALL 58 SY OF 4" ASPHALT PAVING

49. STA. 10+14.5 TO 10+42.5 - 18' TO 24' RT.
INSTALL 168 SF OF 8" CONC. VALLEY GUTTER

50. STA. 10+42.5 TO 10+59.5 - 18' RT.
INSTALL 125 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. - 10+59.5 - 35' RT.

51. STA. 10+45 - 35' TO 74' RT.
INSTALL 39 LF OF B66 CONC. CURB

52. STA. 10+52 - 28' RT.
INSTALL 145 SF OF 6" CONC. SIDEWALK

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	24	72
PAVING 4		

NOTE
TYPICAL JOINT SPACING IS 12' LONGITUDINAL AND 12' TRANSVERSE. JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS, INLETS AND AS DIRECTED BY THE ENGINEER.

NOTE
CONTRACTOR SHALL TRANSITION CROSS SLOPES FROM 13+56 (2%) TO STA. 13+76 (0%)

CONCRETE PAVING

ASPHALT PAVING

SCALE: 1"= 30'

112 W 21ST

108 W 21ST

2103 DOUGLAS AVE.

2026 WALNUT STREET

2019 DOUGLAS AVE.

ASPHALT ALLEY

ROW LINE

21ST STREET

DOUGLAS AVE.

5' SIDEWALK

6' LONG RETAINING WALL TRANSITION FROM 6" TO 2'

5' SIDEWALK FOR TYPE C WALL STA. 12+19 TO 13+59 24.3' TO 29.8' RT.

6' LONG RETAINING WALL TRANSITION FROM 2' TO 6"

MATCH EXISTING

BREAK PT.

53. STA. 10+59.9 TO 13+55.7 - 20.5' LT.
INSTALL 296 LF OF B68 CONC. CURB

54. STA. 10+59.5 TO 13+56.2 - 20.5' RT.
INSTALL 297 LF OF CONC. CURB

55. STA. 11+00 TO 13+76
INSTALL 1104 SY OF 8" CONC. PAVING

56. STA. 11+16.5 TO 11+33.1 - 20.5' TO 27.5' LT.
INSTALL 103 SF OF 6" CONC. DRIVEWAY

57. STA. 10+63 TO 12+19 - 25' TO 30' LT.
INSTALL 777 SF OF 6" CONC. SIDEWALK

58. STA. 12+01.1 TO 12+20.7 - 20.5' TO 27.5' LT.
INSTALL 125 SF OF 6" CONC. DRIVEWAY

59. STA. 12+03.2 TO 12+19.1 - 20.5' TO 27.4' RT.
INSTALL 60 SF OF 6" CONC. DRIVEWAY

60. STA. 12+19 TO 13+59 - 24.3' TO 29.8' RT.
INSTALL 705 SF OF 6" SIDEWALK FOR TYPE C RETAINING WALL
INSTALL 286 SF OF SD DOT TYPE C RETAINING WALL

61. STA. 13+66 - 30' LT.
INSTALL 160 SF OF 6" CONC. SIDEWALK

62. STA. 13+55.7 TO 13+75.7 - 18' LT.
INSTALL 164 SF OF 8" CONC. FILLET
(17.5' BOC RADIUS) - RAD. PT. - 13+55.6 - 38' LT.

63. STA. 13+56.1 TO 13+76.1 - 18' RT.
INSTALL 161 SF OF 8" CONC. FILLET
(17.5' BOC RADIUS) - RAD. PT. 13+56.1 - 38' RT.

64. STA. 13+63 - 26' RT.
INSTALL 80 SF OF 6" CONC. SIDEWALK

65. STA. 13+73 - 38' TO 87' RT.
INSTALL 49 LF OF B68 CONC. CURB

66. STA. 13+76.1 TO 14+12.2 - 18' TO 90' RT.
INSTALL 285 SY OF 8" CONC. PAVING
INSTALL 61 SY OF 4" ASPHALT PAVING

67. STA. 13+76 TO 14+12 - 18' RT. TO 18' LT.
INSTALL 136.9 SY OF 8" CONC. PAVING

68. STA. 13+75.8 TO 14+12.2 - 18' TO 34' LT.
INSTALL 68.2 SY OF 8" CONC. PAVING

69. STA. 14+12.2 TO 14+26.2 - 16' LT.
INSTALL 123 SF OF 8" CONC. FILLET
(14.5' BOC RADIUS) - RAD. PT. - 14+29.3 - 33' LT.

70. STA. 14+23 - 25' LT.
INSTALL 150 SF OF 6" CONC. SIDEWALK

71. STA. 14+29.2 TO 14+86.9 - 18.5' LT.
INSTALL 58 LF OF B68 CONC. CURB

72. STA. 14+12 TO 14+87 - 16' RT TO 16' LT.
INSTALL 266.7 SY OF 8" CONC. PAVING

73. STA. 14+15 - 36' TO 89' RT.
INSTALL 53 LF OF B68 CONC. CURB

74. STA. 14+12.2 TO 14+32.2 - 16' RT.
INSTALL 157 SF OF 8" CONC. FILLET
(17.5' BOC RADIUS) - RAD. PT. - 14+32.1 - 36' RT.

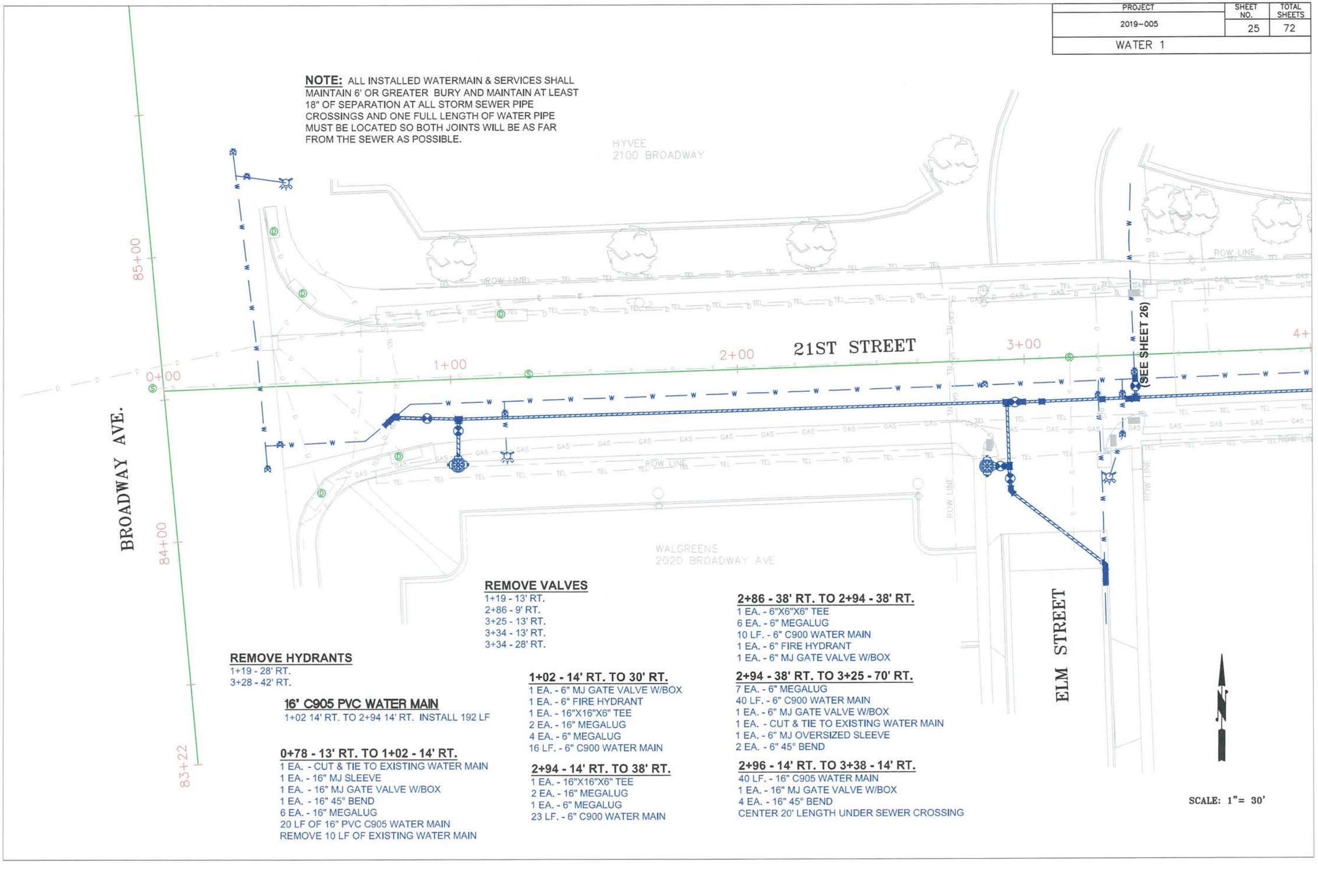
75. STA. 14+26 - 24' RT.
INSTALL 165 SF OF 6" CONC. SIDEWALK

76. STA. 14+32.2 TO 14+87.1 - 18.5' RT.
INSTALL 55 LF OF CONC. CURB

77. STA. 13+73.5 TO 13+94 - 34' TO 52' LT.
INSTALL 12 LF OF CONC. CURB
INSTALL 34 SY OF 8" CONCRETE PAVING

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	25	72
WATER 1		

NOTE: ALL INSTALLED WATERMAIN & SERVICES SHALL MAINTAIN 6' OR GREATER BURY AND MAINTAIN AT LEAST 18" OF SEPARATION AT ALL STORM SEWER PIPE CROSSINGS AND ONE FULL LENGTH OF WATER PIPE MUST BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.



REMOVE VALVES
1+19 - 13' RT.
2+86 - 9' RT.
3+25 - 13' RT.
3+34 - 13' RT.
3+34 - 28' RT.

REMOVE HYDRANTS
1+19 - 28' RT.
3+28 - 42' RT.

16" C905 PVC WATER MAIN
1+02 14' RT. TO 2+94 14' RT. INSTALL 192 LF

0+78 - 13' RT. TO 1+02 - 14' RT.
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 16" MJ SLEEVE
1 EA. - 16" MJ GATE VALVE W/BOX
1 EA. - 16" 45° BEND
6 EA. - 16" MEGALUG
20 LF OF 16" PVC C905 WATER MAIN
REMOVE 10 LF OF EXISTING WATER MAIN

1+02 - 14' RT. TO 30' RT.
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - 6" FIRE HYDRANT
1 EA. - 16"X16"X6" TEE
2 EA. - 16" MEGALUG
4 EA. - 6" MEGALUG
16 LF. - 6" C900 WATER MAIN

2+94 - 14' RT. TO 38' RT.
1 EA. - 16"X16"X6" TEE
2 EA. - 16" MEGALUG
1 EA. - 6" MEGALUG
23 LF. - 6" C900 WATER MAIN

2+86 - 38' RT. TO 2+94 - 38' RT.
1 EA. - 6"X6"X6" TEE
6 EA. - 6" MEGALUG
10 LF. - 6" C900 WATER MAIN
1 EA. - 6" FIRE HYDRANT
1 EA. - 6" MJ GATE VALVE W/BOX

2+94 - 38' RT. TO 3+25 - 70' RT.
7 EA. - 6" MEGALUG
40 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE
2 EA. - 6" 45° BEND

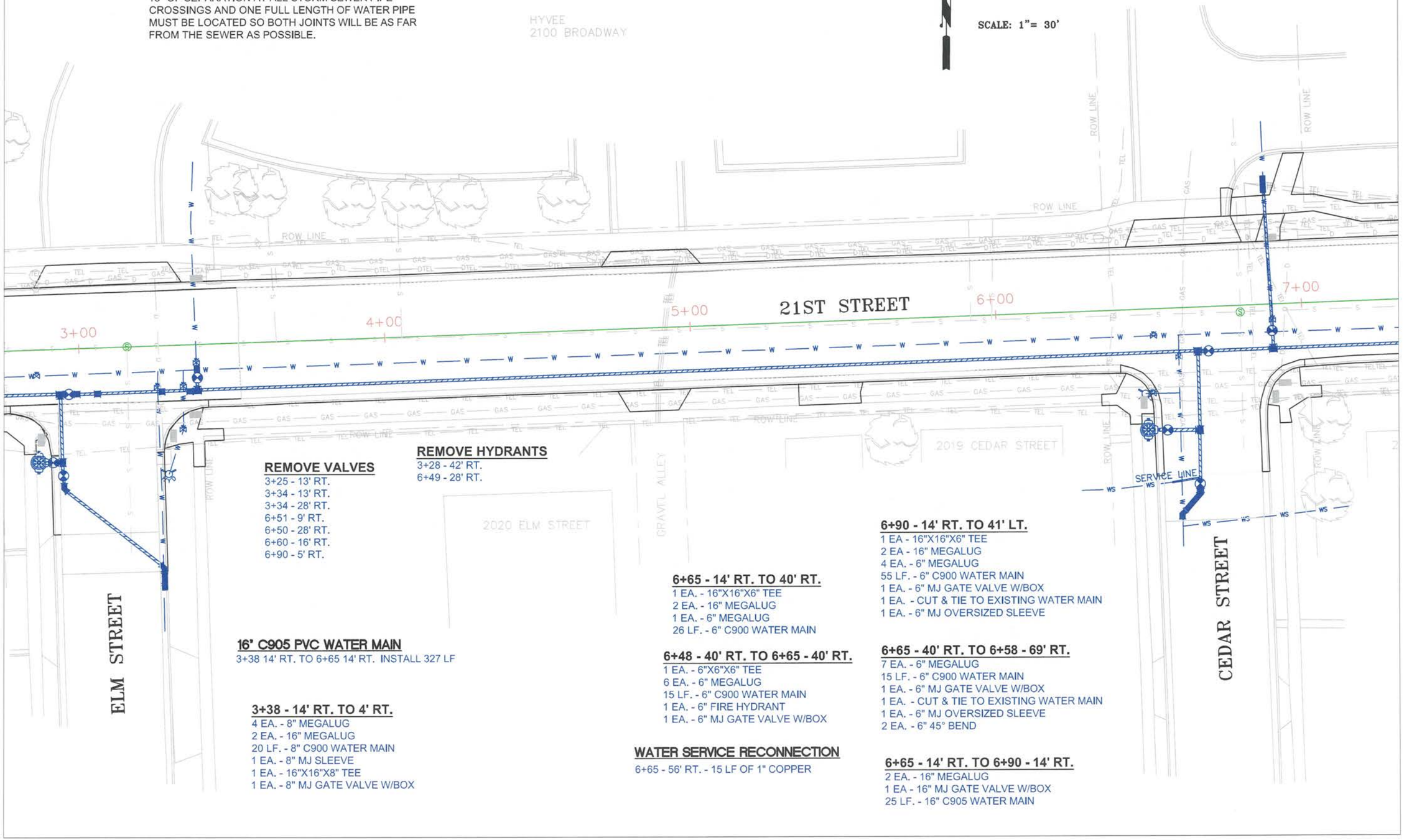
2+96 - 14' RT. TO 3+38 - 14' RT.
40 LF. - 16" C905 WATER MAIN
1 EA. - 16" MJ GATE VALVE W/BOX
4 EA. - 16" 45° BEND
CENTER 20' LENGTH UNDER SEWER CROSSING

SCALE: 1"= 30'

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	26	72
WATER 2		

NOTE: ALL INSTALLED WATERMAIN & SERVICES SHALL MAINTAIN 6' OR GREATER BURY AND MAINTAIN AT LEAST 18" OF SEPARATION AT ALL STORM SEWER PIPE CROSSINGS AND ONE FULL LENGTH OF WATER PIPE MUST BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.

SCALE: 1"= 30'



REMOVE VALVES
3+25 - 13' RT.
3+34 - 13' RT.
3+34 - 28' RT.
6+51 - 9' RT.
6+50 - 28' RT.
6+60 - 16' RT.
6+90 - 5' RT.

REMOVE HYDRANTS
3+28 - 42' RT.
6+49 - 28' RT.

16" C905 PVC WATER MAIN
3+38 14' RT. TO 6+65 14' RT. INSTALL 327 LF

3+38 - 14' RT. TO 4' RT.
4 EA. - 8" MEGALUG
2 EA. - 16" MEGALUG
20 LF. - 8" C900 WATER MAIN
1 EA. - 8" MJ SLEEVE
1 EA. - 16"X16"X8" TEE
1 EA. - 8" MJ GATE VALVE W/BOX

6+65 - 14' RT. TO 40' RT.
1 EA. - 16"X16"X6" TEE
2 EA. - 16" MEGALUG
1 EA. - 6" MEGALUG
26 LF. - 6" C900 WATER MAIN

6+48 - 40' RT. TO 6+65 - 40' RT.
1 EA. - 6"X6"X6" TEE
6 EA. - 6" MEGALUG
15 LF. - 6" C900 WATER MAIN
1 EA. - 6" FIRE HYDRANT
1 EA. - 6" MJ GATE VALVE W/BOX

WATER SERVICE RECONNECTION
6+65 - 56' RT. - 15 LF OF 1" COPPER

6+90 - 14' RT. TO 41' LT.
1 EA - 16"X16"X6" TEE
2 EA - 16" MEGALUG
4 EA. - 6" MEGALUG
55 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE

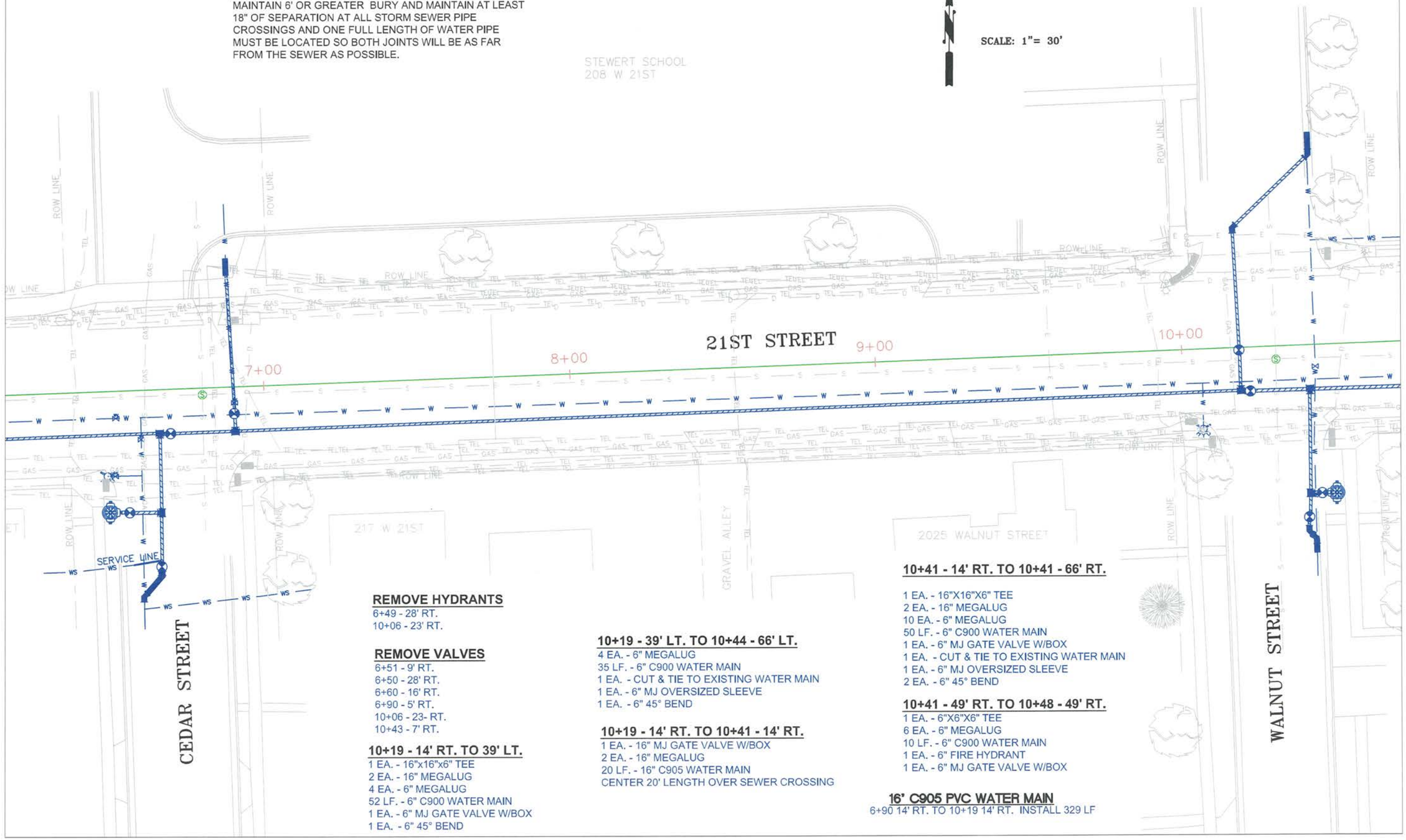
6+65 - 40' RT. TO 6+58 - 69' RT.
7 EA. - 6" MEGALUG
15 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE
2 EA. - 6" 45° BEND

6+65 - 14' RT. TO 6+90 - 14' RT.
2 EA. - 16" MEGALUG
1 EA - 16" MJ GATE VALVE W/BOX
25 LF. - 16" C905 WATER MAIN

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	27	72
WATER 3		

NOTE: ALL INSTALLED WATERMAIN & SERVICES SHALL MAINTAIN 6' OR GREATER BURY AND MAINTAIN AT LEAST 18" OF SEPARATION AT ALL STORM SEWER PIPE CROSSINGS AND ONE FULL LENGTH OF WATER PIPE MUST BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.

SCALE: 1"= 30'



REMOVE HYDRANTS
6+49 - 28' RT.
10+06 - 23' RT.

REMOVE VALVES
6+51 - 9' RT.
6+50 - 28' RT.
6+60 - 16' RT.
6+90 - 5' RT.
10+06 - 23- RT.
10+43 - 7' RT.

10+19 - 14' RT. TO 39' LT.
1 EA. - 16"x16"x6" TEE
2 EA. - 16" MEGALUG
4 EA. - 6" MEGALUG
52 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - 6" 45° BEND

10+19 - 39' LT. TO 10+44 - 66' LT.
4 EA. - 6" MEGALUG
35 LF. - 6" C900 WATER MAIN
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE
1 EA. - 6" 45° BEND

10+19 - 14' RT. TO 10+41 - 14' RT.
1 EA. - 16" MJ GATE VALVE W/BOX
2 EA. - 16" MEGALUG
20 LF. - 16" C905 WATER MAIN
CENTER 20' LENGTH OVER SEWER CROSSING

10+41 - 14' RT. TO 10+41 - 66' RT.
1 EA. - 16"X16"X6" TEE
2 EA. - 16" MEGALUG
10 EA. - 6" MEGALUG
50 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE
2 EA. - 6" 45° BEND

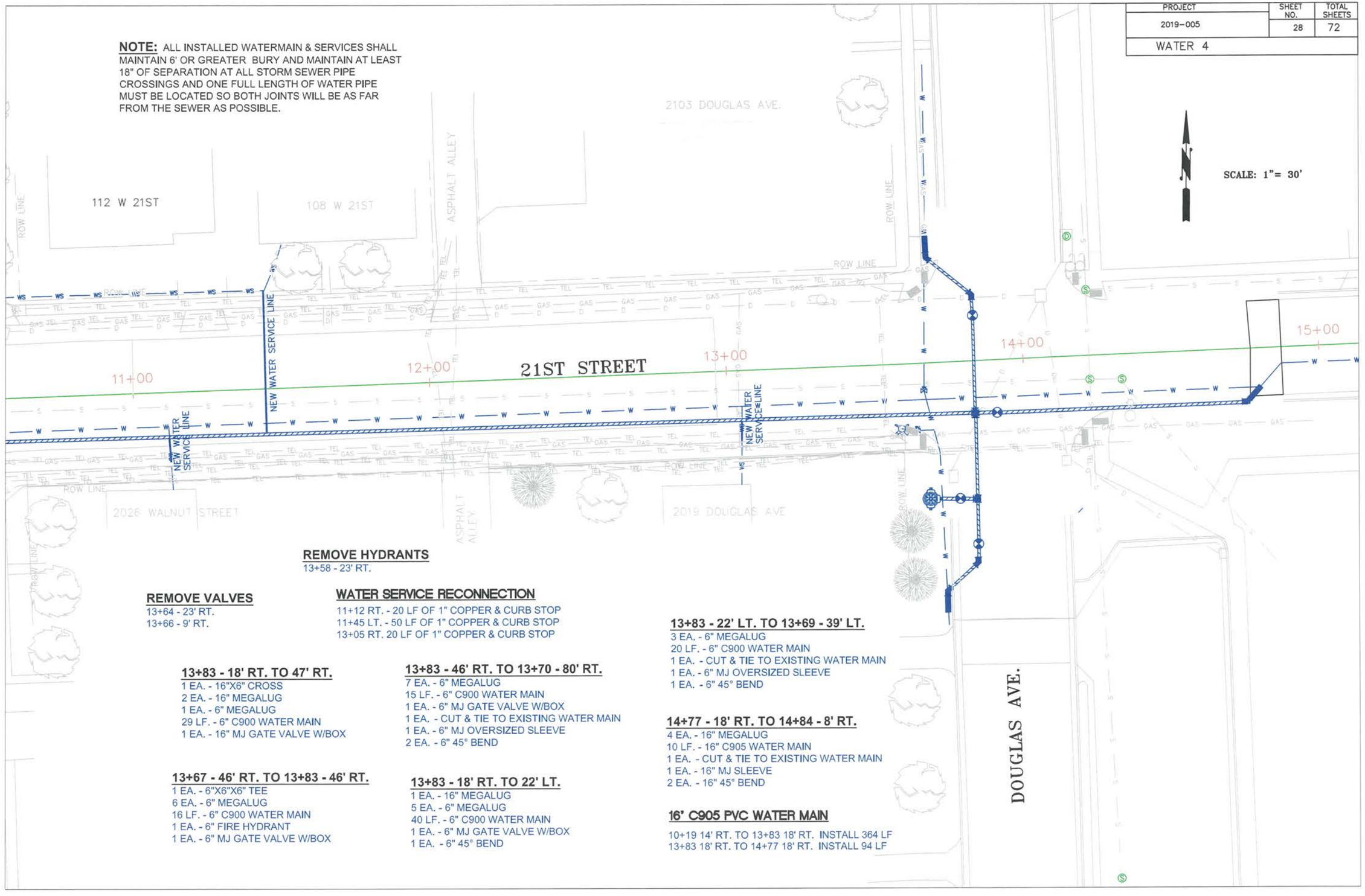
10+41 - 49' RT. TO 10+48 - 49' RT.
1 EA. - 6"X6"X6" TEE
6 EA. - 6" MEGALUG
10 LF. - 6" C900 WATER MAIN
1 EA. - 6" FIRE HYDRANT
1 EA. - 6" MJ GATE VALVE W/BOX

16" C905 PVC WATER MAIN
6+90 14' RT. TO 10+19 14' RT. INSTALL 329 LF

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	28	72
WATER 4		

NOTE: ALL INSTALLED WATERMAIN & SERVICES SHALL MAINTAIN 6' OR GREATER BURY AND MAINTAIN AT LEAST 18" OF SEPARATION AT ALL STORM SEWER PIPE CROSSINGS AND ONE FULL LENGTH OF WATER PIPE MUST BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.

SCALE: 1"= 30'



REMOVE HYDRANTS
13+58 - 23' RT.

REMOVE VALVES
13+64 - 23' RT.
13+66 - 9' RT.

WATER SERVICE RECONNECTION
11+12 RT. - 20 LF OF 1" COPPER & CURB STOP
11+45 LT. - 50 LF OF 1" COPPER & CURB STOP
13+05 RT. 20 LF OF 1" COPPER & CURB STOP

13+83 - 18' RT. TO 47' RT.
1 EA. - 16"X6" CROSS
2 EA. - 16" MEGALUG
1 EA. - 6" MEGALUG
29 LF. - 6" C900 WATER MAIN
1 EA. - 16" MJ GATE VALVE W/BOX

13+83 - 46' RT. TO 13+70 - 80' RT.
7 EA. - 6" MEGALUG
15 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE
2 EA. - 6" 45° BEND

13+67 - 46' RT. TO 13+83 - 46' RT.
1 EA. - 6"X6"X6" TEE
6 EA. - 6" MEGALUG
16 LF. - 6" C900 WATER MAIN
1 EA. - 6" FIRE HYDRANT
1 EA. - 6" MJ GATE VALVE W/BOX

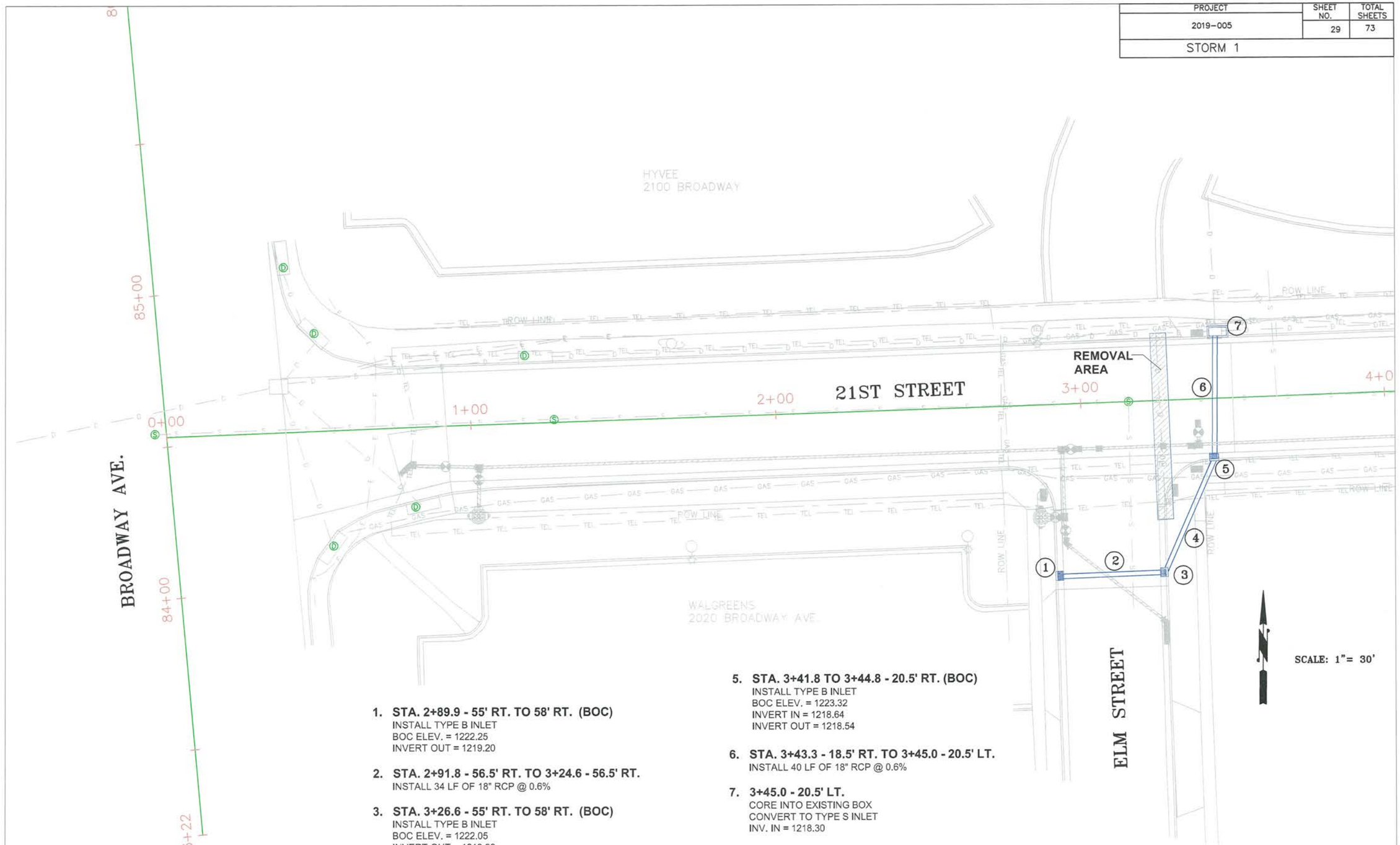
13+83 - 18' RT. TO 22' LT.
1 EA. - 16" MEGALUG
5 EA. - 6" MEGALUG
40 LF. - 6" C900 WATER MAIN
1 EA. - 6" MJ GATE VALVE W/BOX
1 EA. - 6" 45° BEND

13+83 - 22' LT. TO 13+69 - 39' LT.
3 EA. - 6" MEGALUG
20 LF. - 6" C900 WATER MAIN
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 6" MJ OVERSIZED SLEEVE
1 EA. - 6" 45° BEND

14+77 - 18' RT. TO 14+84 - 8' RT.
4 EA. - 16" MEGALUG
10 LF. - 16" C905 WATER MAIN
1 EA. - CUT & TIE TO EXISTING WATER MAIN
1 EA. - 16" MJ SLEEVE
2 EA. - 16" 45° BEND

16" C905 PVC WATER MAIN
10+19 14' RT. TO 13+83 18' RT. INSTALL 364 LF
13+83 18' RT. TO 14+77 18' RT. INSTALL 94 LF

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	29	73
STORM 1		



1. **STA. 2+89.9 - 55' RT. TO 58' RT. (BOC)**
   INSTALL TYPE B INLET
   BOC ELEV. = 1222.25
   INVERT OUT = 1219.20

2. **STA. 2+91.8 - 56.5' RT. TO 3+24.6 - 56.5' RT.**
   INSTALL 34 LF OF 18" RCP @ 0.6%

3. **STA. 3+26.6 - 55' RT. TO 58' RT. (BOC)**
   INSTALL TYPE B INLET
   BOC ELEV. = 1222.05
   INVERT OUT = 1218.90
   INVERT IN = 1219.00

4. **STA. 3+25.6 - 56.5' RT. TO 3+43.3 - 20' RT.**
   INSTALL 42 LF OF 18" RCP @ 0.6%

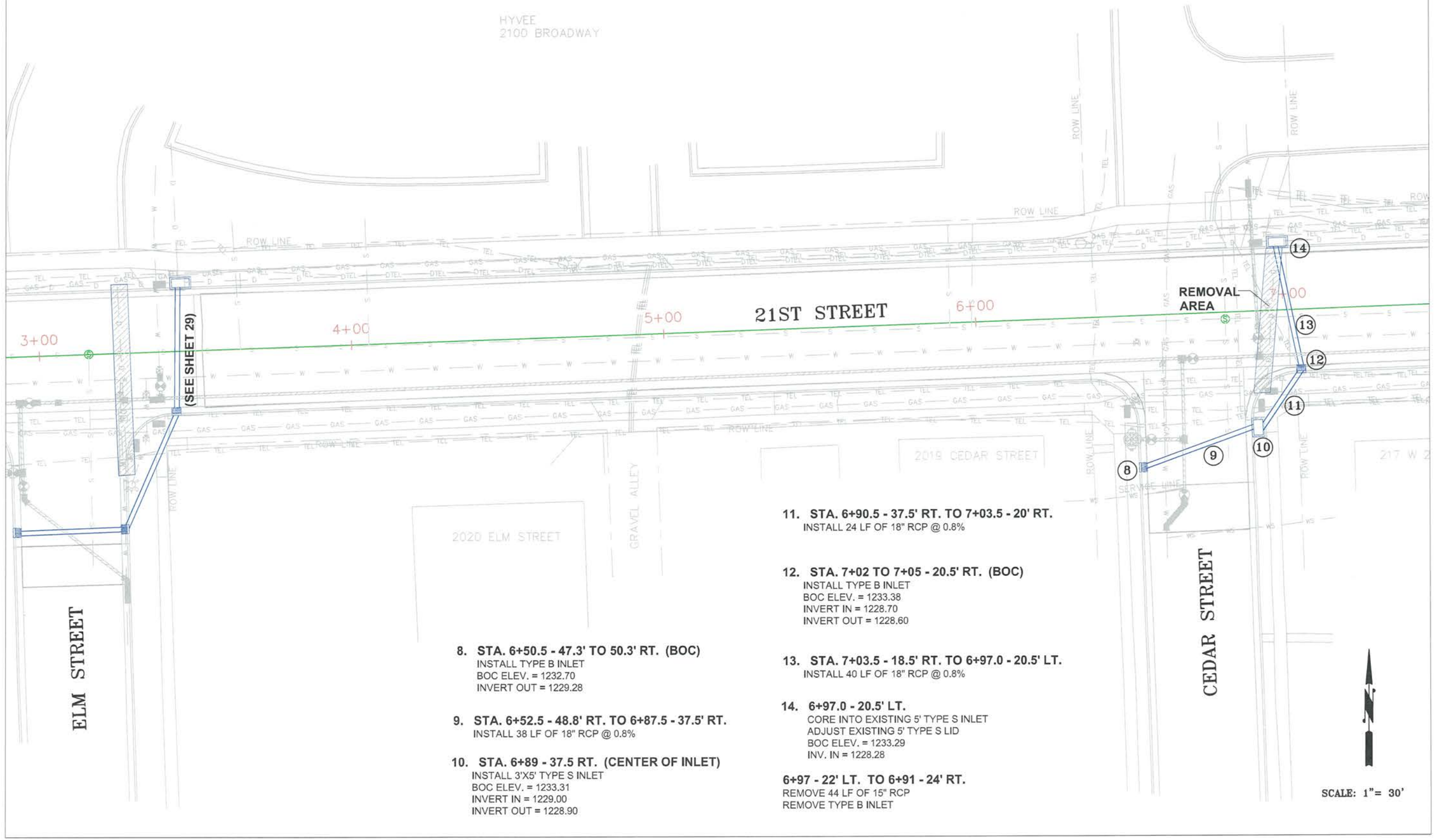
5. **STA. 3+41.8 TO 3+44.8 - 20.5' RT. (BOC)**
   INSTALL TYPE B INLET
   BOC ELEV. = 1223.32
   INVERT IN = 1218.64
   INVERT OUT = 1218.54

6. **STA. 3+43.3 - 18.5' RT. TO 3+45.0 - 20.5' LT.**
   INSTALL 40 LF OF 18" RCP @ 0.6%

7. **3+45.0 - 20.5' LT.**
   CORE INTO EXISTING BOX
   CONVERT TO TYPE S INLET
   INV. IN = 1218.30

3+26 - 22' LT. TO 3+27 - 34' RT.
REMOVE 56 LF OF 15" RCP
REMOVE TYPE B INLET
SAW CUT AND PLUG WITH CONCRETE THE EXISTING 15" RCP AT 3+26 - 22' LT.

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	30	73
PAVING 2		



8. STA. 6+50.5 - 47.3' TO 50.3' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1232.70
INVERT OUT = 1229.28

9. STA. 6+52.5 - 48.8' RT. TO 6+87.5 - 37.5' RT.
INSTALL 38 LF OF 18" RCP @ 0.8%

10. STA. 6+89 - 37.5 RT. (CENTER OF INLET)
INSTALL 3'X5' TYPE S INLET
BOC ELEV. = 1233.31
INVERT IN = 1229.00
INVERT OUT = 1228.90

11. STA. 6+90.5 - 37.5' RT. TO 7+03.5 - 20' RT.
INSTALL 24 LF OF 18" RCP @ 0.8%

12. STA. 7+02 TO 7+05 - 20.5' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1233.38
INVERT IN = 1228.70
INVERT OUT = 1228.60

13. STA. 7+03.5 - 18.5' RT. TO 6+97.0 - 20.5' LT.
INSTALL 40 LF OF 18" RCP @ 0.8%

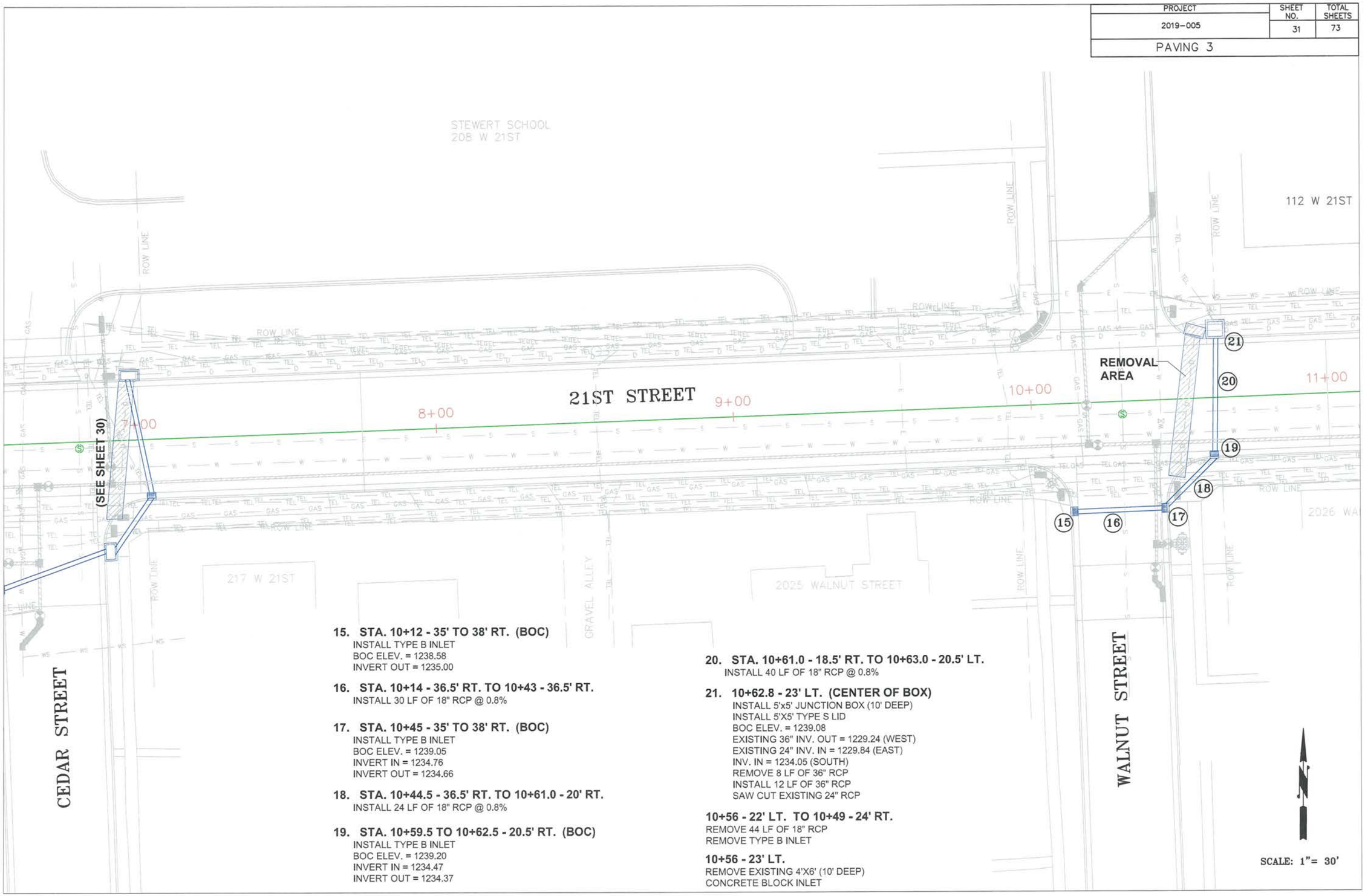
14. 6+97.0 - 20.5' LT.
CORE INTO EXISTING 5' TYPE S INLET
ADJUST EXISTING 5' TYPE S LID
BOC ELEV. = 1233.29
INV. IN = 1228.28

6+97 - 22' LT. TO 6+91 - 24' RT.
REMOVE 44 LF OF 15" RCP
REMOVE TYPE B INLET

N

SCALE: 1"= 30'

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	31	73
PAVING 3		



15. STA. 10+12 - 35' TO 38' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1238.58
INVERT OUT = 1235.00

16. STA. 10+14 - 36.5' RT. TO 10+43 - 36.5' RT.
INSTALL 30 LF OF 18" RCP @ 0.8%

17. STA. 10+45 - 35' TO 38' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1239.05
INVERT IN = 1234.76
INVERT OUT = 1234.66

18. STA. 10+44.5 - 36.5' RT. TO 10+61.0 - 20' RT.
INSTALL 24 LF OF 18" RCP @ 0.8%

19. STA. 10+59.5 TO 10+62.5 - 20.5' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1239.20
INVERT IN = 1234.47
INVERT OUT = 1234.37

20. STA. 10+61.0 - 18.5' RT. TO 10+63.0 - 20.5' LT.
INSTALL 40 LF OF 18" RCP @ 0.8%

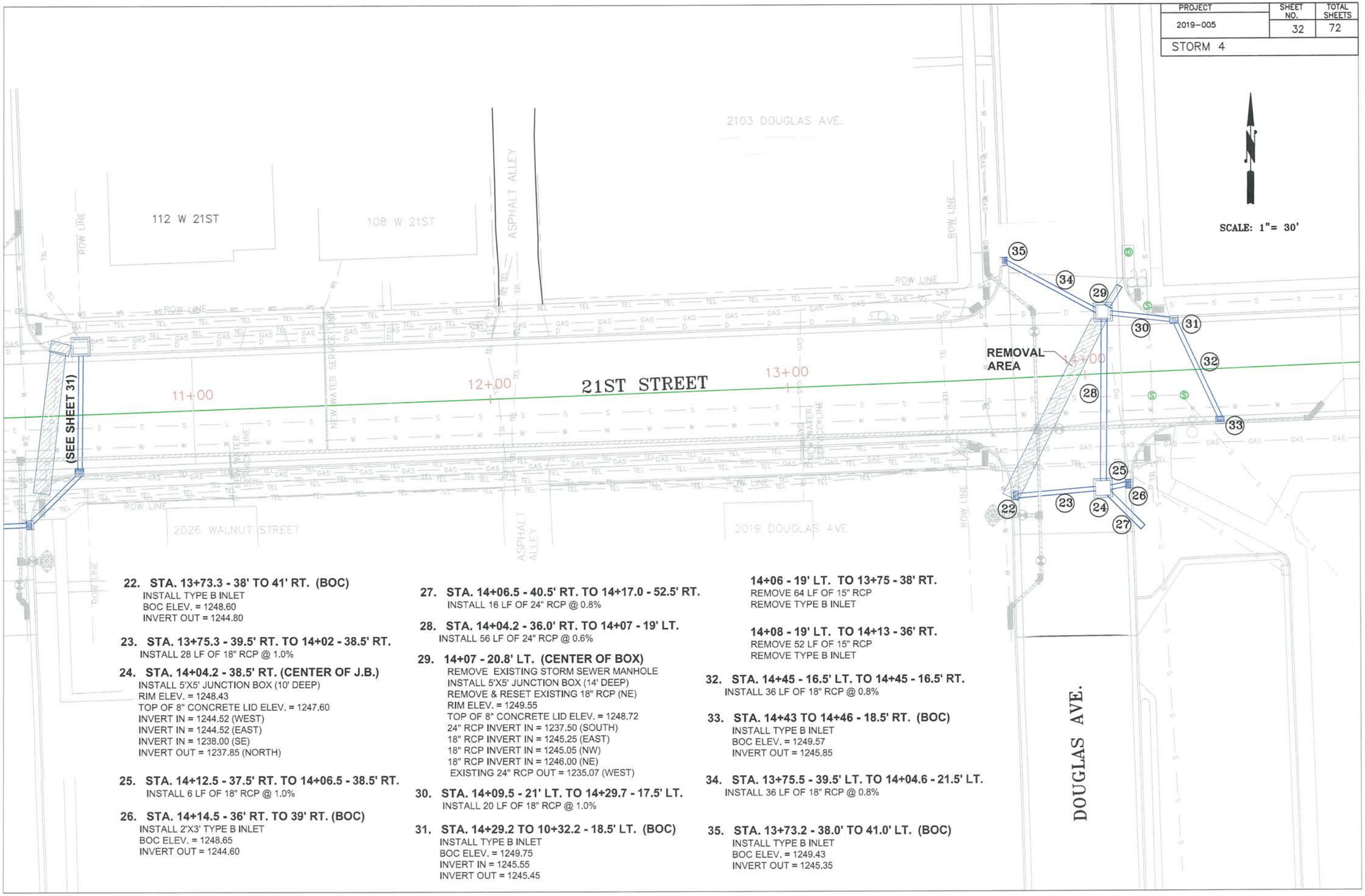
21. 10+62.8 - 23' LT. (CENTER OF BOX)
INSTALL 5'x5' JUNCTION BOX (10' DEEP)
INSTALL 5'X5' TYPE S LID
BOC ELEV. = 1239.08
EXISTING 36" INV. OUT = 1229.24 (WEST)
EXISTING 24" INV. IN = 1229.84 (EAST)
INV. IN = 1234.05 (SOUTH)
REMOVE 8 LF OF 36" RCP
INSTALL 12 LF OF 36" RCP
SAW CUT EXISTING 24" RCP

10+56 - 22' LT. TO 10+49 - 24' RT.
REMOVE 44 LF OF 18" RCP
REMOVE TYPE B INLET

10+56 - 23' LT.
REMOVE EXISTING 4'X6' (10' DEEP)
CONCRETE BLOCK INLET

SCALE: 1"= 30'

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	32	72
STORM 4		



SCALE: 1"= 30'

22. STA. 13+73.3 - 38' TO 41' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1248.60
INVERT OUT = 1244.80

23. STA. 13+75.3 - 39.5' RT. TO 14+02 - 38.5' RT.
INSTALL 28 LF OF 18" RCP @ 1.0%

24. STA. 14+04.2 - 38.5' RT. (CENTER OF J.B.)
INSTALL 5'X5' JUNCTION BOX (10' DEEP)
RIM ELEV. = 1248.43
TOP OF 8" CONCRETE LID ELEV. = 1247.60
INVERT IN = 1244.52 (WEST)
INVERT IN = 1244.52 (EAST)
INVERT IN = 1238.00 (SE)
INVERT OUT = 1237.85 (NORTH)

25. STA. 14+12.5 - 37.5' RT. TO 14+06.5 - 38.5' RT.
INSTALL 6 LF OF 18" RCP @ 1.0%

26. STA. 14+14.5 - 36' RT. TO 39' RT. (BOC)
INSTALL 2'X3' TYPE B INLET
BOC ELEV. = 1248.65
INVERT OUT = 1244.60

27. STA. 14+06.5 - 40.5' RT. TO 14+17.0 - 52.5' RT.
INSTALL 16 LF OF 24" RCP @ 0.8%

28. STA. 14+04.2 - 36.0' RT. TO 14+07 - 19' LT.
INSTALL 56 LF OF 24" RCP @ 0.6%

29. 14+07 - 20.8' LT. (CENTER OF BOX)
REMOVE EXISTING STORM SEWER MANHOLE
INSTALL 5'X5' JUNCTION BOX (14' DEEP)
REMOVE & RESET EXISTING 18" RCP (NE)
RIM ELEV. = 1249.55
TOP OF 8" CONCRETE LID ELEV. = 1248.72
24" RCP INVERT IN = 1237.50 (SOUTH)
18" RCP INVERT IN = 1245.25 (EAST)
18" RCP INVERT IN = 1245.05 (NW)
18" RCP INVERT IN = 1246.00 (NE)
EXISTING 24" RCP OUT = 1235.07 (WEST)

30. STA. 14+09.5 - 21' LT. TO 14+29.7 - 17.5' LT.
INSTALL 20 LF OF 18" RCP @ 1.0%

31. STA. 14+29.2 TO 10+32.2 - 18.5' LT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1249.75
INVERT IN = 1245.55
INVERT OUT = 1245.45

14+06 - 19' LT. TO 13+75 - 38' RT.
REMOVE 64 LF OF 15" RCP
REMOVE TYPE B INLET

14+08 - 19' LT. TO 14+13 - 36' RT.
REMOVE 52 LF OF 15" RCP
REMOVE TYPE B INLET

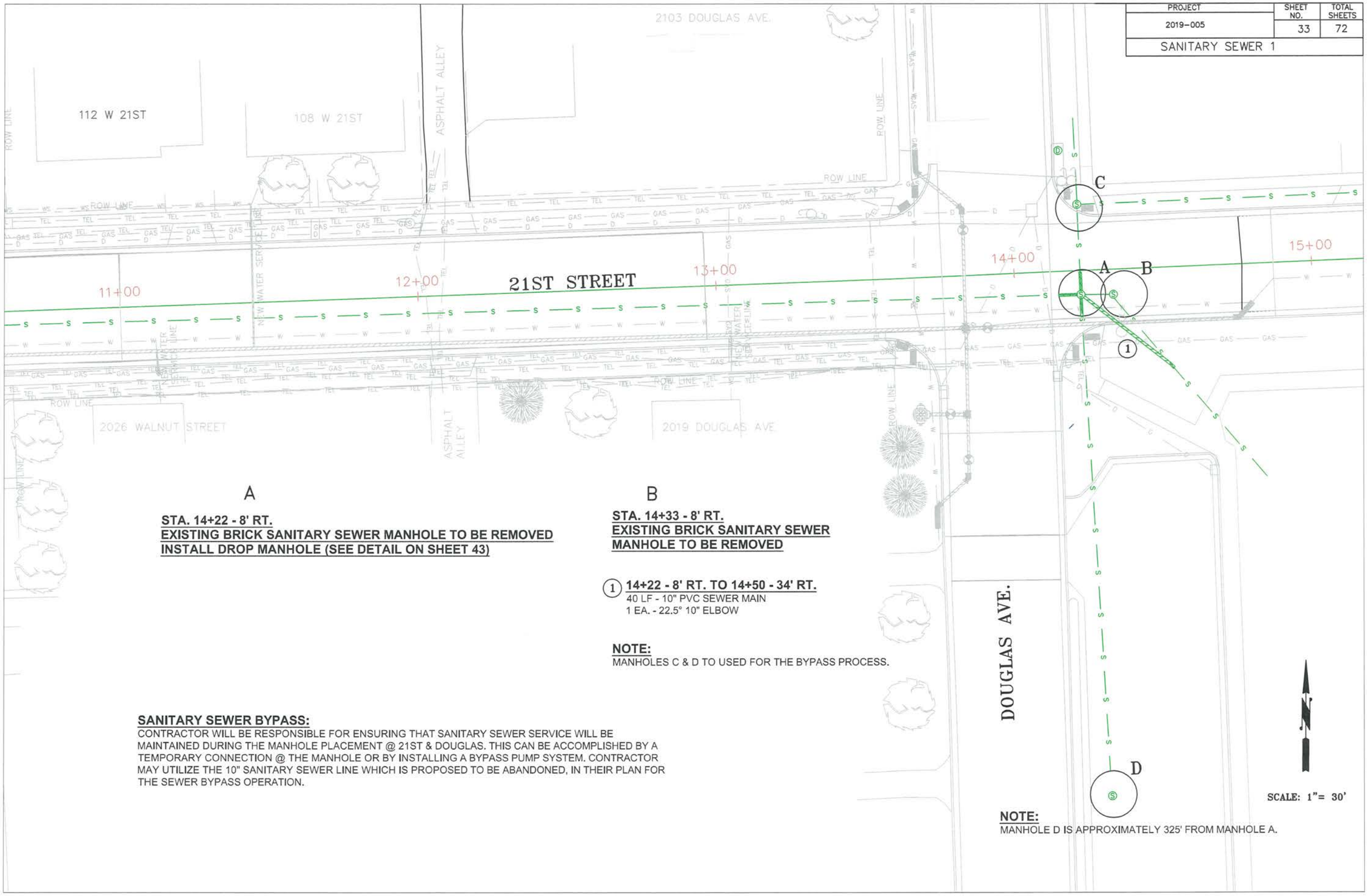
32. STA. 14+45 - 16.5' LT. TO 14+45 - 16.5' RT.
INSTALL 36 LF OF 18" RCP @ 0.8%

33. STA. 14+43 TO 14+46 - 18.5' RT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1249.57
INVERT OUT = 1245.85

34. STA. 13+75.5 - 39.5' LT. TO 14+04.6 - 21.5' LT.
INSTALL 36 LF OF 18" RCP @ 0.8%

35. STA. 13+73.2 - 38.0' TO 41.0' LT. (BOC)
INSTALL TYPE B INLET
BOC ELEV. = 1249.43
INVERT OUT = 1245.35

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	33	72
SANITARY SEWER 1		



A

STA. 14+22 - 8' RT.
EXISTING BRICK SANITARY SEWER MANHOLE TO BE REMOVED
INSTALL DROP MANHOLE (SEE DETAIL ON SHEET 43)

B

STA. 14+33 - 8' RT.
EXISTING BRICK SANITARY SEWER MANHOLE TO BE REMOVED

(1) **14+22 - 8' RT. TO 14+50 - 34' RT.**
40 LF - 10" PVC SEWER MAIN
1 EA. - 22.5° 10" ELBOW

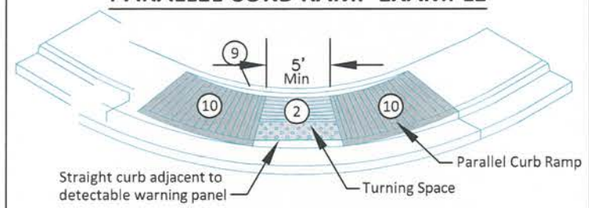
NOTE:
MANHOLES C & D TO USED FOR THE BYPASS PROCESS.

SANITARY SEWER BYPASS:
CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT SANITARY SEWER SERVICE WILL BE MAINTAINED DURING THE MANHOLE PLACEMENT @ 21ST & DOUGLAS. THIS CAN BE ACCOMPLISHED BY A TEMPORARY CONNECTION @ THE MANHOLE OR BY INSTALLING A BYPASS PUMP SYSTEM. CONTRACTOR MAY UTILIZE THE 10" SANITARY SEWER LINE WHICH IS PROPOSED TO BE ABANDONED, IN THEIR PLAN FOR THE SEWER BYPASS OPERATION.

NOTE:
MANHOLE D IS APPROXIMATELY 325' FROM MANHOLE A.

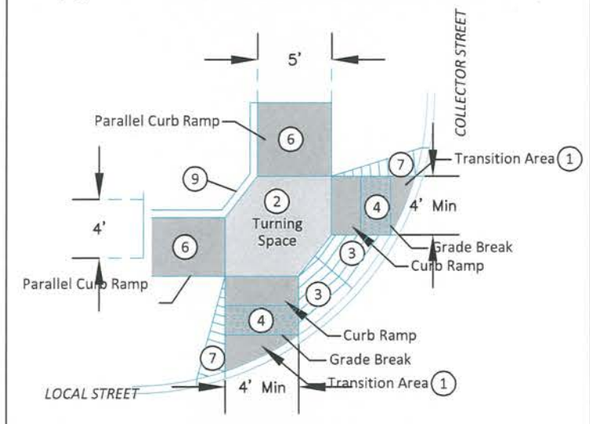
PROJECT	SHEET NO.	TOTAL SHEETS
2019–005	34	72
SIDEWALK DETAIL		

PARALLEL CURB RAMP EXAMPLE

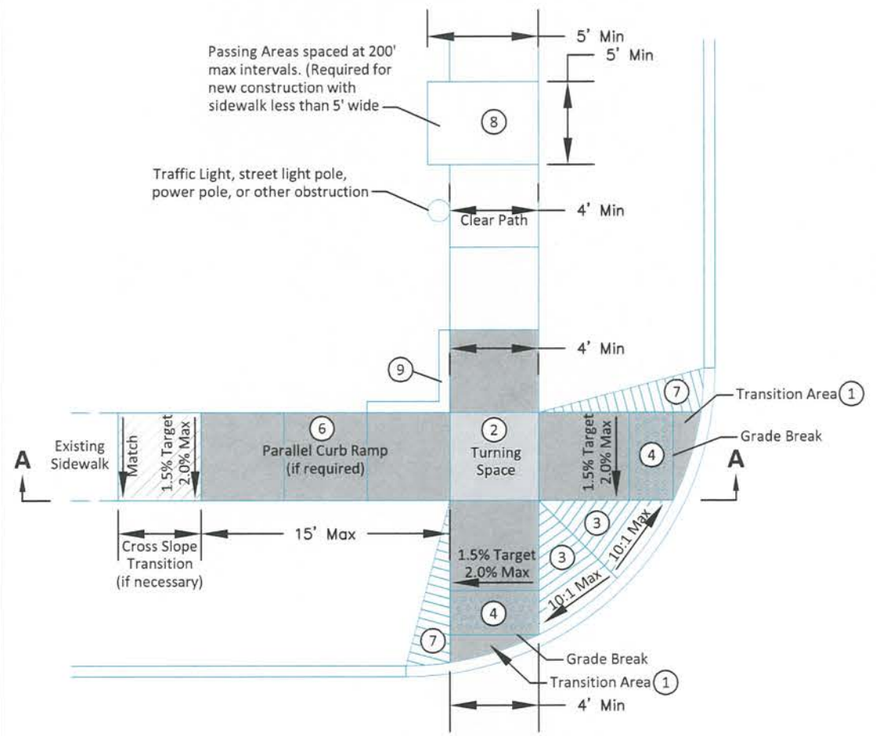


DIRECTIONAL SIDEWALK RAMP EXAMPLE

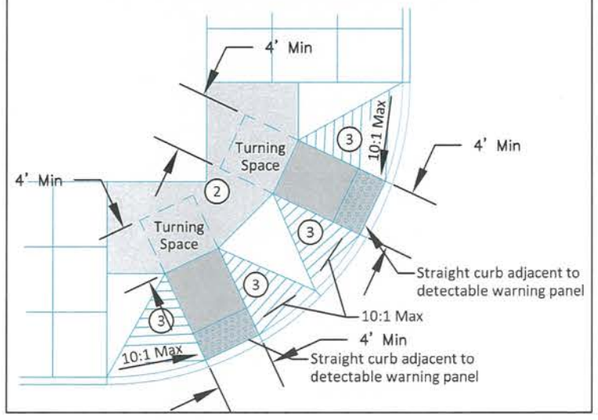
(Typical of a local/collector intersection with a 20' radius)



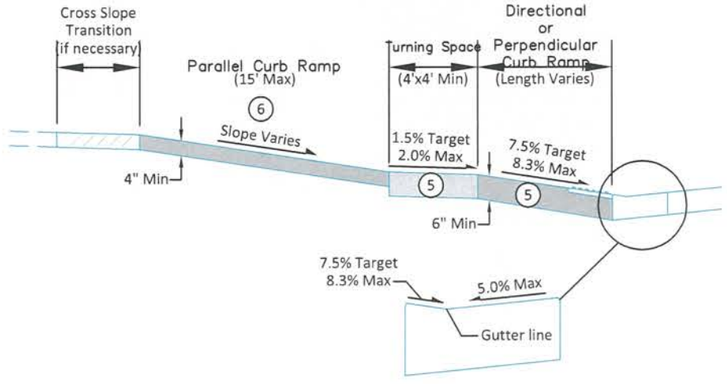
DIRECTIONAL SIDEWALK RAMP EXAMPLE



PERPENDICULAR CURB RAMP EXAMPLE



SECTION A-A



NOTES:

1. Transition from the the 2% maximum cross slope on the ramp and the pedestrian street crossing grade in this area. The maximum cross slope on the pedestrian street crossing (including the fillet or curb and gutter) is 2% on stop or yield controlled legs and 5% on uncontrolled or signalized legs.
2. Minimum 4 feet by 4 feet. Target cross slope of 1.5% with a maximum cross slope of 2.0% in any direction. Where the turning space is confined at the back of sidewalk (example: 6" curb or building), the turning space shall be 4 foot by 5 foot minimum. The 5 foot dimension shall be in the direction of the ramp run. The grade change between the turning space and the curb ramp must be perpendicular to the direction of travel.
3. Areas where the pedestrian circulation path crosses a curb ramp are considered flare sides. The maximum slope of the flare sides is 10%. Full curb height may not be able to be reestablished on flare slopes but as much curb height as possible should be reestablished.
4. Provide a minimum 2 foot width of detectable warning surfaces in the direction of pedestrian travel across the full width of the curb ramp or turning space, exclusive of curbs or flares. Orient domes in the direction of pedestrian travel unless otherwise stated in plans.
5. The concrete in the turning space, curb ramp, and flare slope areas shall be a minimum thickness of 6 inches.
6. If normal sidewalk elevation cannot be achieved with the perpendicular ramp between the street and turning space due to limited ramp length, provide a parallel ramp to make up the elevation difference between the turning space and the standard sidewalk. This parallel ramp shall not exceed 8.3% slope. However, the length of the ramp is not required to exceed 15 feet, regardless of slope. The minimum sidewalk thickness for the parallel ramp in this area is 4 inches.
7. Install a 2 foot taper when additional sidewalk will not be located adjacent to the curb ramp.
8. Depending on the conditions, a curb up to 6 inches high may need to be installed on the back of the turning space or adjoining sidewalk.
9. The slope of curb ramp and adjacent curb is designed at 7.5% or less but shall not be steeper than 8.3% unless otherwise specified in the plans. The curb ramp is not required to exceed 15 feet, regardless of slope. The cross slope target is 1.5% with a maximum cross slope of 2.0%.

GENERAL NOTES:

The turning space, curb ramp, and detectable warning panel area will be paid for at the contact unit price for the corresponding concrete sidewalk bid item.

The detectable warning panel shall be measured and paid for to the nearest square foot. Payment shall include all costs for materials, labor, and equipment necessary for the installation of the detectable warning panels.

Revised: December 2016

CITY OF SIOUX FALLS
ENGINEERING DIVISION

ACCESSIBLE CURB RAMPS

SPECIFICATION REFERENCE	PLATE NUMBER
NO. 650	651.02

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	35	72
CURB & DRIVEWAY		

30" CONCRETE CURB AND GUTTER
N.T.S

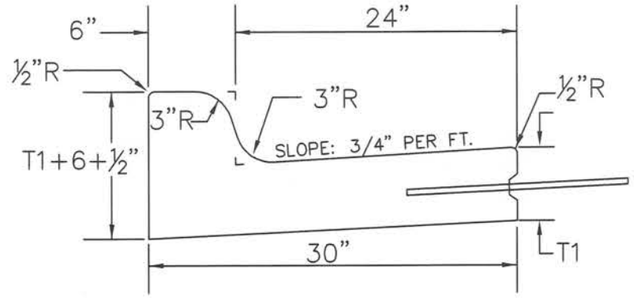
1/2" Preformed Expansion Joint Fillers shall be placed, Tranversely in the Curb & Gutter as follows:

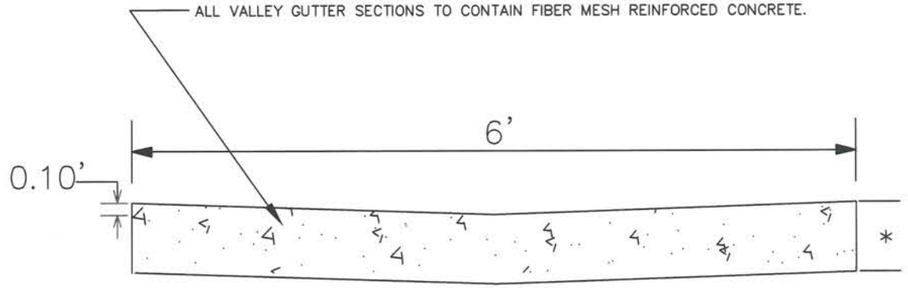
(1) At each junction of Radius return Curb & Gutter and the Curb & Gutter which is parallel to the project centerline.
(2) At each junction with existing Concrete Curb or Concrete Curb & Gutter
(3) At each junction with existing sidewalk, to the depth of the sidewalk.
(4) At a maximum of 195 L.F. appart, measured along the face of the Curb & Gutter.

1/2" Preformed Expansion Joint Filler shall be placed, Longitudinally, along the backface of the Curb, to the depth of the sidewalk, where such backface of Curb is adjacent to an existing Concrete Sidewalk.

Weakened Plane Joints shall be constructed at Approx. 10' intervals. The joints shall be constructed to a minimum depth of one inch by scoring with a tool which coincide with pavement joints leave the corners rounded and insure a free movement of the Concrete at the joint.

TYPE	T1 INCHES	CU. YD PER LIN. FT.
B66	6"	0.055
B67	7"	0.063
B68	8"	0.071
B68.5	8.5"	0.074
B69	9"	0.078
B69.5	9.5"	0.082
B610	10"	0.086
B610.5	10.5"	0.090
B611	11"	0.094
B611.5	11.5"	0.098
B612	12.0"	0.102

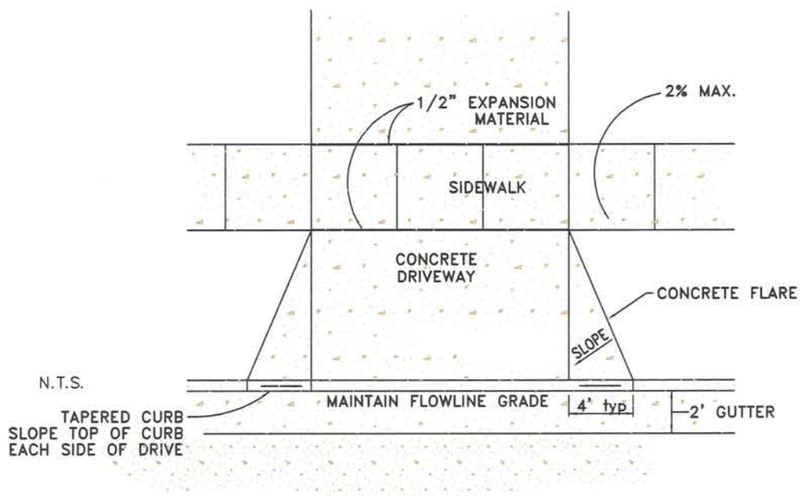


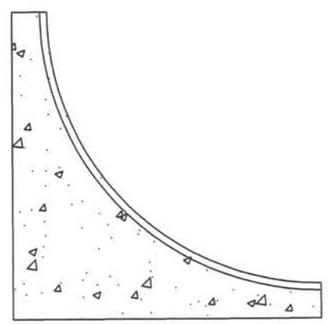


TYPICAL VALLEY GUTTER DETAIL
N.T.S.

* ALL VALLEY GUTTER SECTIONS TO A MINIMUM OF 8" OR THE SAME THICKNESS AS THE ADJOINING CONCRETE PAVING.

DETAIL FOR CONCRETE FLARES AND TAPERED CURB AT DRIVEWAYS
N.T.S.

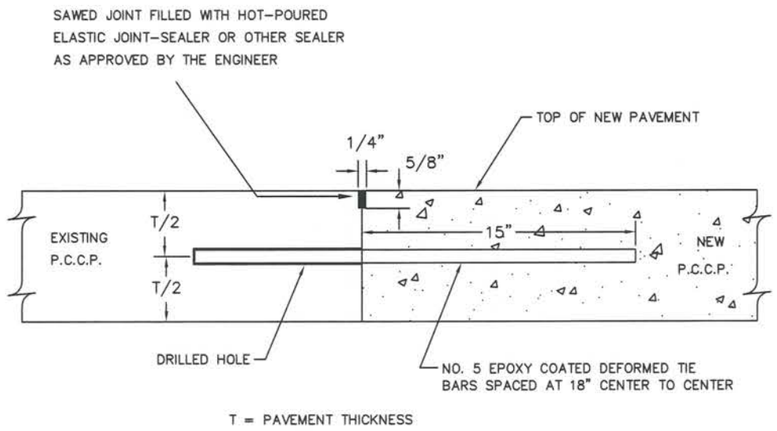




TYPICAL FILLET SECTION
N.T.S.

All Fillet sections to contain fiber mesh reinforced concrete.

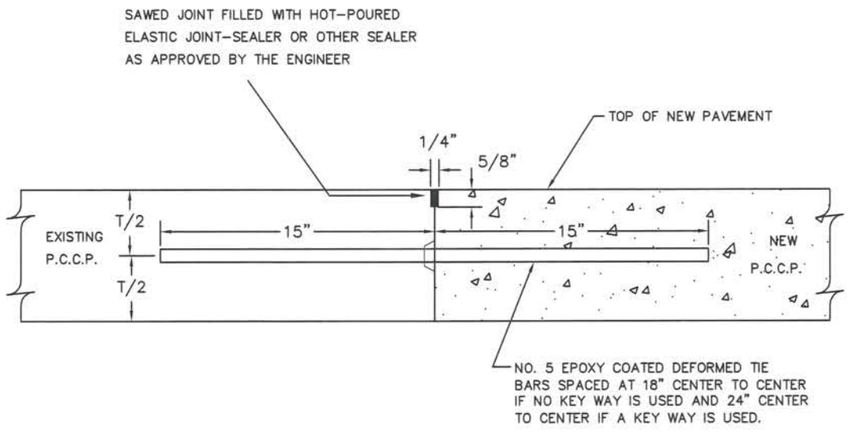
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	36	72
TRANSVERSE JOINT		



T = PAVEMENT THICKNESS

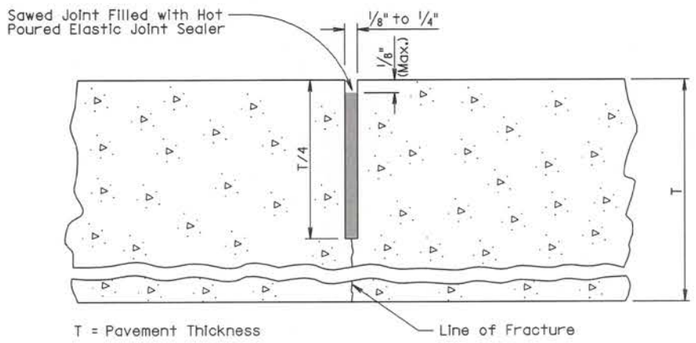
GENERAL NOTES

THE TIE BAR IS TO BE EMBEDDED A MINIMUM DEPTH OF 9 INCHES INTO THE EXISTING PAVEMENT BY UTILIZING AN EPOXY RESIN ADHESIVE.



T = PAVEMENT THICKNESS

PCC PAVEMENT TRANSVERSE JOINTS WITH TIE BARS



GENERAL NOTES:

The saw cut to control cracking shall be a minimum of 1/4 the thickness of the pavement.

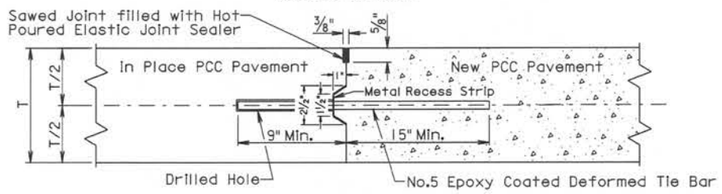
All hot poured elastic joint sealer material spilled on the surface of the concrete pavement shall be removed as soon as the material has cooled. The extent of removal of material shall be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material shall be borne by the Contractor.

December 23, 2007

Published Date: 4th Qtr. 2009	SDDOT	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.03 Sheet 1 of 1

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	37	72
LONGITUDINAL JOINT 1		

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)



T = Pavement Thickness

GENERAL NOTES:

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

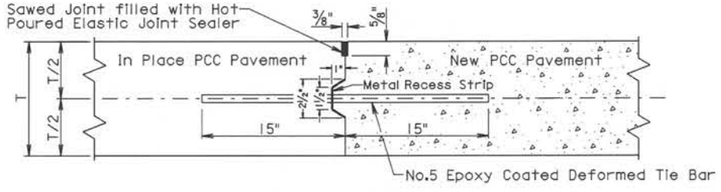
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INSERTED OR FORMED IN BARS)



T = Pavement Thickness

GENERAL NOTES:

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

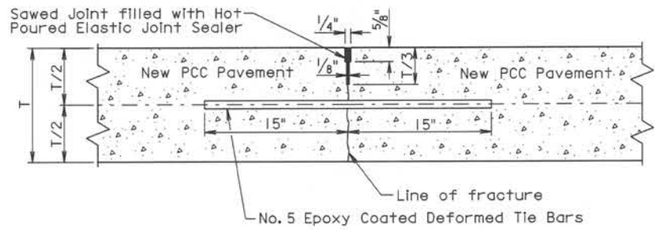
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

Published Date: 4th Qtr. 2007	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITH TIE BARS
(POURED MONOLITHICALLY)



T = Pavement Thickness

GENERAL NOTES:

No. 5 epoxy coated deformed tie bars shall be spaced 48 inches center to center.

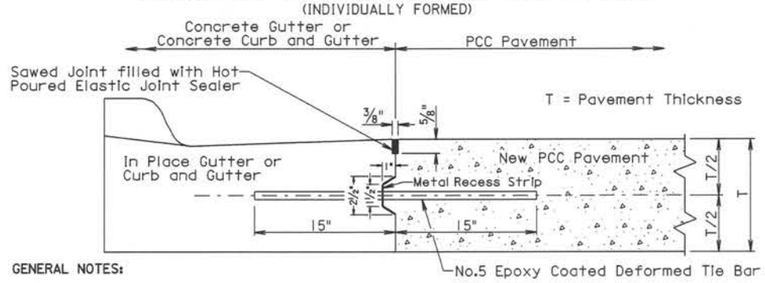
The tie bars shall be placed a minimum of 15 inches from the existing transverse contraction joints.

The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer will be necessary.

September 14, 2001

Published Date: 4th Qtr. 2007	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 2 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INDIVIDUALLY FORMED)



GENERAL NOTES:

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center. The keyway shown above is a female keyway.

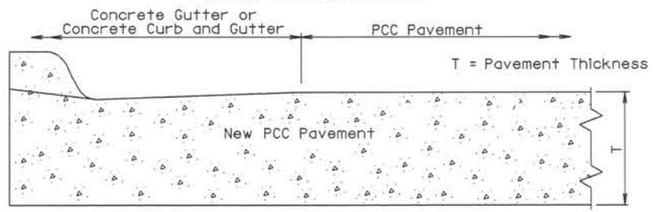
The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1½" deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least ¼ the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY



GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

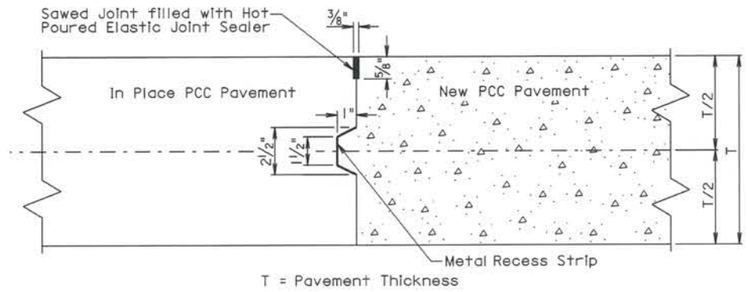
The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter shall be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter shall be constructed at the same slope as the mainline concrete pavement.

September 14, 2005

Published Date: 4th Qtr. 2007	SDDOT	PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER	PLATE NUMBER 380.11 Sheet 1 of 1

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS

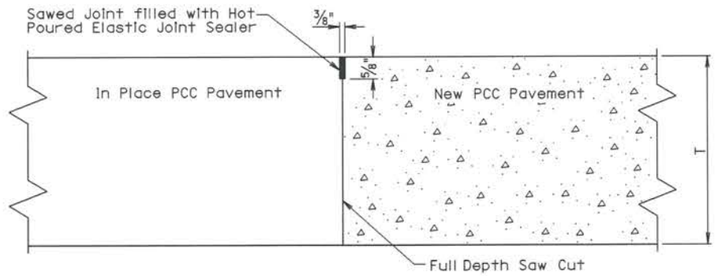


GENERAL NOTES:

When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



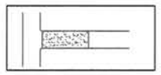
GENERAL NOTE:

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

September 14, 2001

Published Date: 4th Qtr. 2007	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS	PLATE NUMBER 380.12 Sheet 1 of 2

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	39	72
VTC & SILT FENCE		



VTC

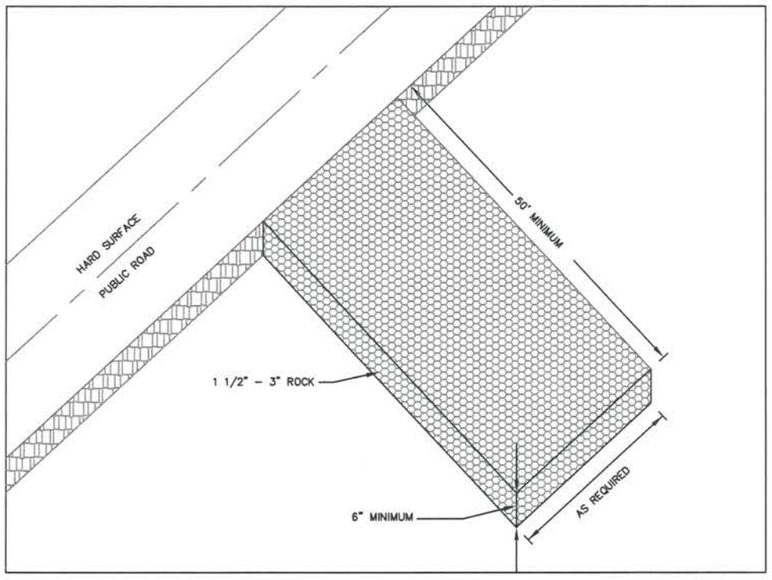
VEHICLE TRACKING CONTROL

DEFINITION:

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSES:

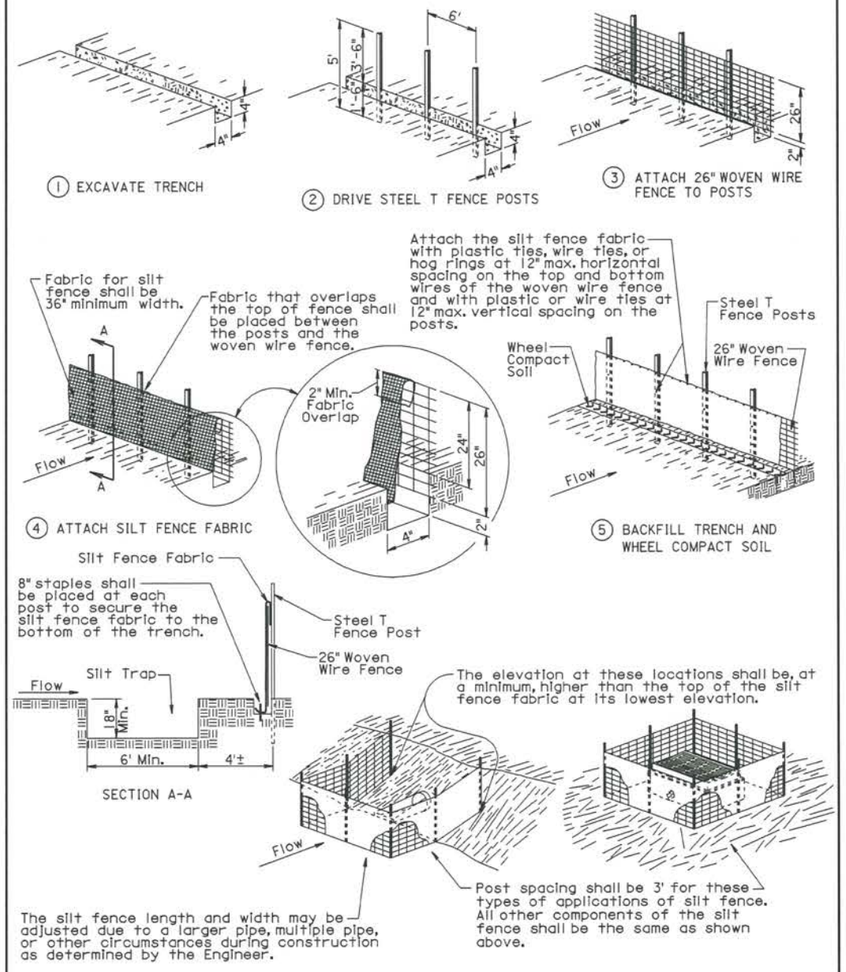
TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.



REVISED: MAY 2003

SPECIFICATION REFERENCE NO. 734	CITY OF SIOUX FALLS ENGINEERING DIVISION TEMPORARY VEHICLE TRACKING CONTROL	PLATE NUMBER 734.02

MANUAL LOW FLOW SILT FENCE INSTALLATION

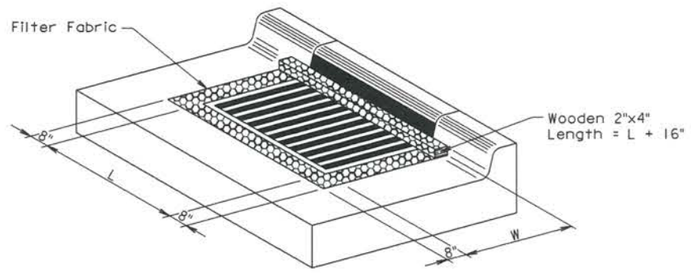


① EXCAVATE TRENCH
② DRIVE STEEL T FENCE POSTS
③ ATTACH 26" WOVEN WIRE FENCE TO POSTS
④ ATTACH SILT FENCE FABRIC
⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL

December 23, 2003

Published Date: 4th Qtr. 2007	SDDOT	*LOW FLOW SILT FENCE AND SILT TRAP*	*PLATE NUMBER 734.04* Sheet 1 of 2

L = Length of Grate
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric shall be the type specified in the plans.

The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

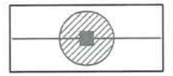
The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

Published Date: 1st Qtr. 2012	SDDOT	***SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES***	*PLATE NUMBER* 734.10 *Sheet 1 of 1*



INLET PROTECTION

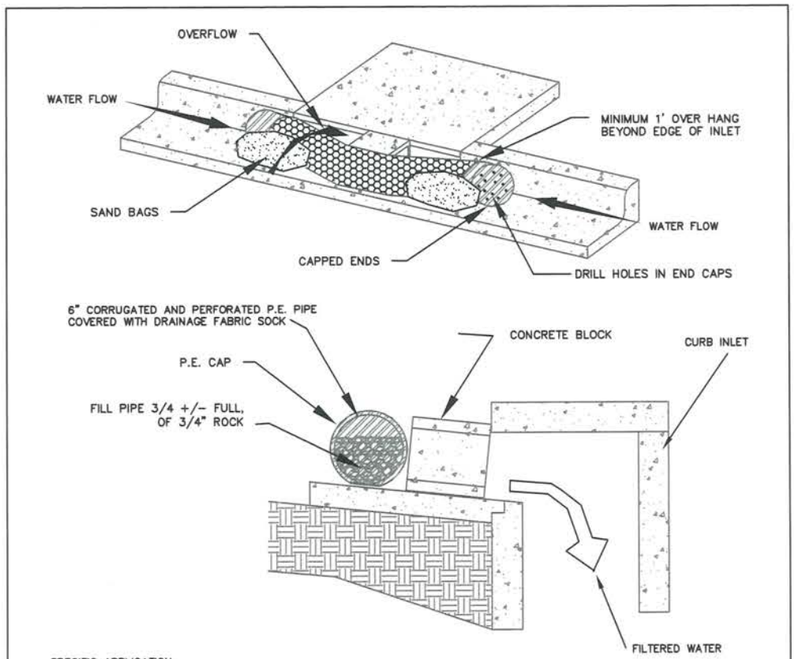
IP

DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET. TO BE USED AT SUMP CONDITIONS.

PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.

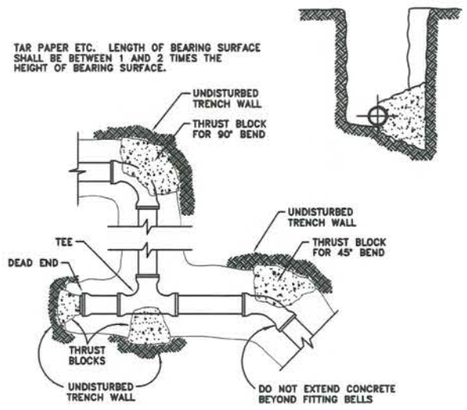


SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS. CLEAN OUT AS NECESSARY TO PREVENT BLOCKAGE OF RUNOFF CONVEYANCE.

REVISED: NOVEMBER 2008

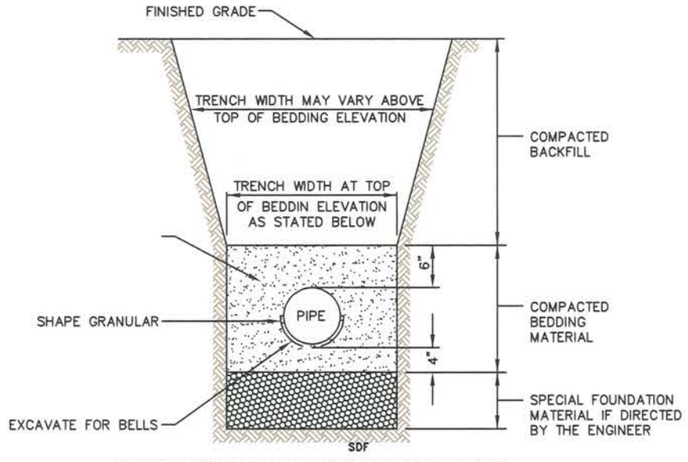
SPECIFICATION REFERENCE NO. 734	CITY OF SIOUX FALLS ENGINEERING DIVISION CORRUGATED PIPE AND FABRIC INLET PROTECTION - OVERFLOW	PLATE NUMBER 734.16

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	41	72
WATER MAIN DETAIL		



SDF

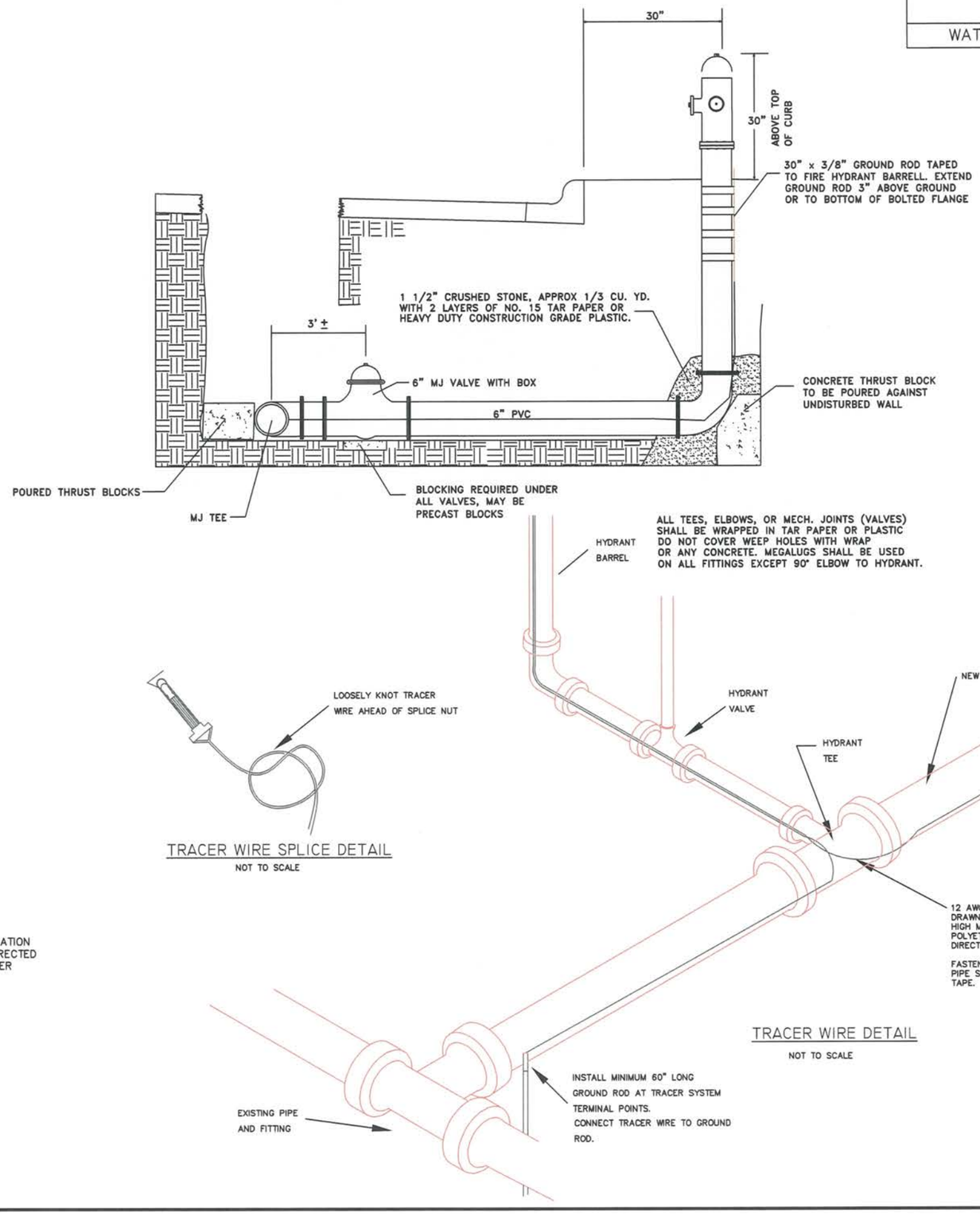
SCHEDULE OF BRACING REQUIRED FOR C.I.P. FITTINGS – BEARING AREA – SQ. FT.					
PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
12"	11 1/2	16	9	4 1/2	2 1/2
10"	8	11	6	3	1 1/2
8"	5	7	4	2	1
6"	3	4	2	1	1/2
4"	1 1/2	1 1/2	1	1/2	–



WHERE TRENCH WALLS BELOW THE TOP OF THE BEDDING MATERIAL ARE VERTICAL AND FREE-STANDING, MINIMUM TRENCH WIDTHS ARE AS FOLLOWS:

PIPE SIZE	MINIMUM TRENCH WIDTH
8"	24"
10"	26"
12"	28"
15"	32"
18"	36"
21"	40"
24"	43"

DETAIL OF BEDDING & BACKFILL



TRACER WIRE SPLICE DETAIL

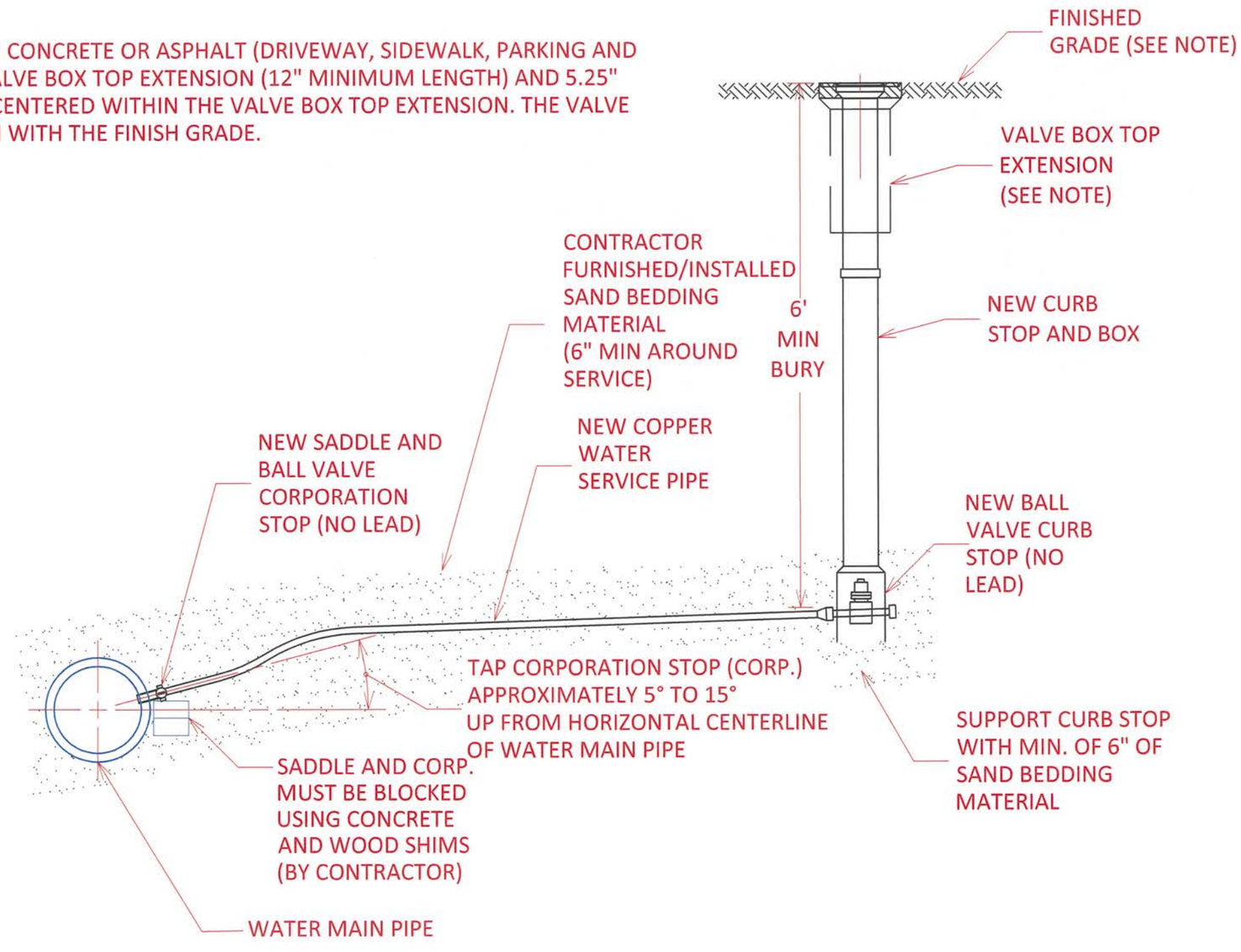
NOT TO SCALE

TRACER WIRE DETAIL

NOT TO SCALE

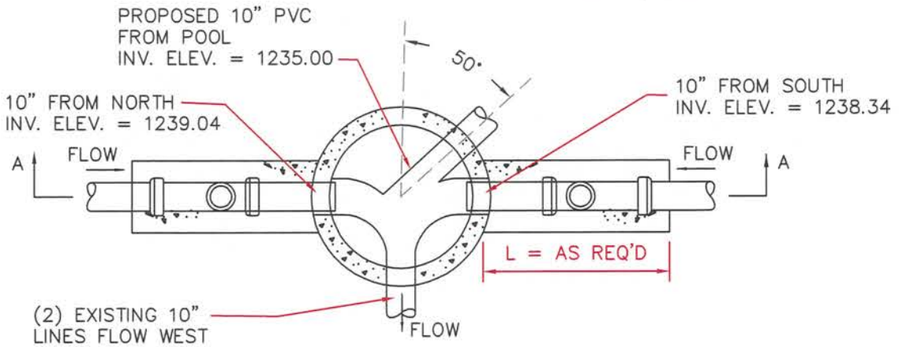
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	42	72
WATER SERVICE		

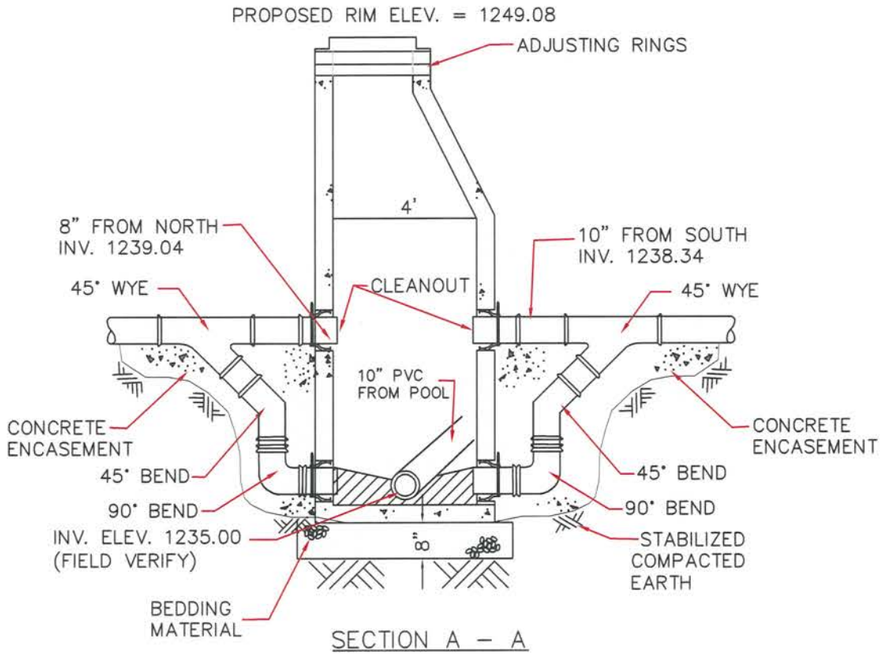
NOTE:
CURB STOP BOXES LOCATED WITHIN CONCRETE OR ASPHALT (DRIVEWAY, SIDEWALK, PARKING AND STREET) SHALL BE FITTED WITH A VALVE BOX TOP EXTENSION (12" MINIMUM LENGTH) AND 5.25" DROP LID. THE CURB STOP WILL BE CENTERED WITHIN THE VALVE BOX TOP EXTENSION. THE VALVE BOX TOP EXTENSION WILL SIT FLUSH WITH THE FINISH GRADE.



PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	43	72
DROP MANHOLE & 3'X5' TYPE S INLET		

PLAN
nts.

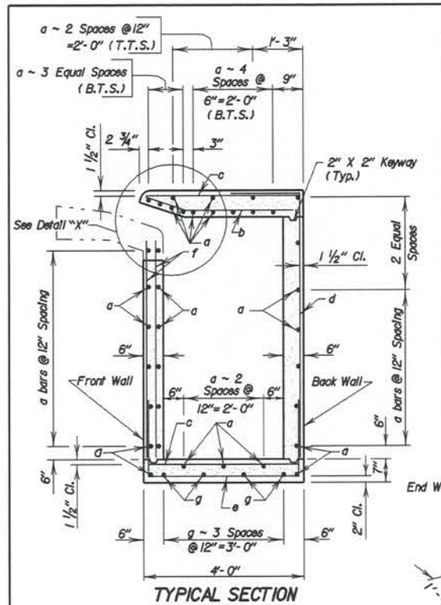




SECTION A – A

4' DROP SANITARY MANHOLE

NTS

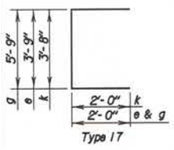


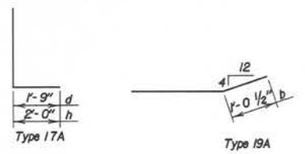
TYPICAL SECTION

REINFORCING SCHEDULE

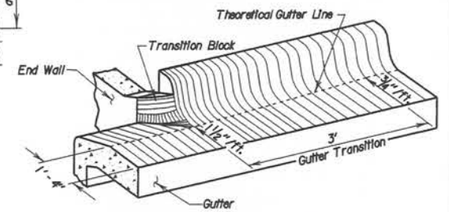
Mk.	No.	Size	Length	Type
a	21+3H	4	5'-6"	Str.
b	6	4	3'-9"	19A
c	20	4	3'-9"	Str.
d	12	4	H + 3'-3"	17A
e	12	4	7'-9"	17
f	16	4	H + 6"	Str.
g	4	4	9'-9"	17
h	14	4	H + 3'-6"	17A
k	2H	4	7'-9"	17

Bending Details

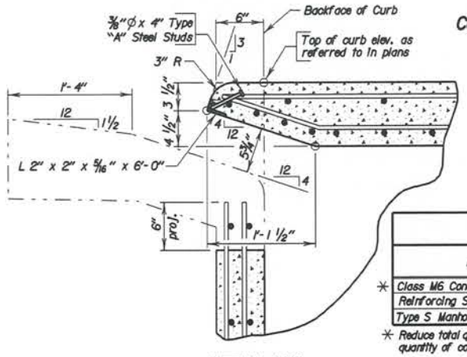




NOTE:
All dimensions are out to out of bars.



GUTTER TRANSITION AND
CURB TRANSITION BLOCK DETAIL
(Top Slab not shown)



DETAIL "X"

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu'd	1.36	0.33H
Reinforcing Steel	Lb	295	49.32H
Type S Manhole Frame and Lid	Each	1	———

* Reduce total quantities of concrete by the volume displaced by the pipe. Total quantity of concrete shall be computed to the nearest hundredth of a cubic yard.

September 14, 2005

Published Date: 4th Qtr. 2009

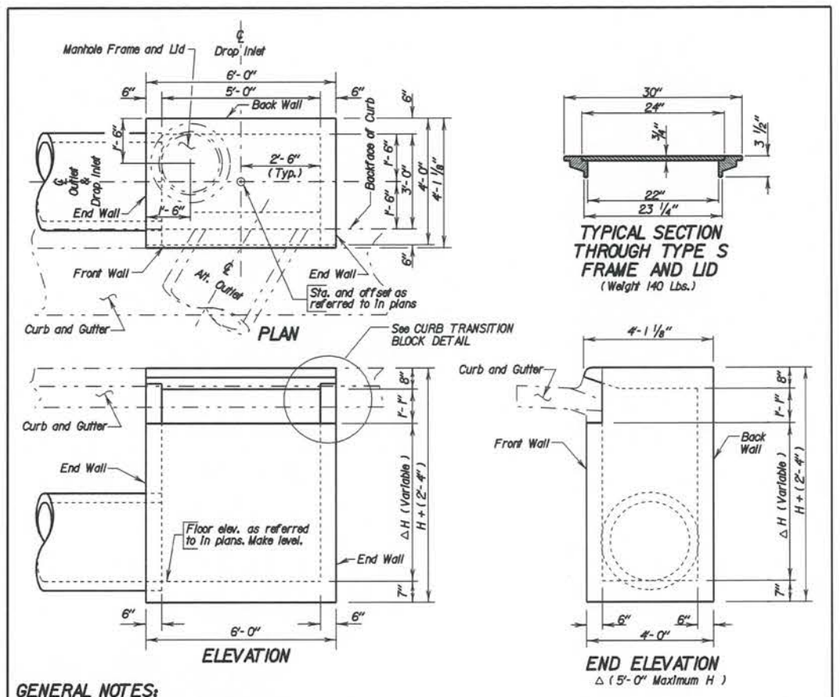
SDDOT

3'X 5' TYPE S
REINFORCED CONCRETE DROP INLET

PLATE NUMBER
670.30

Sheet 3 of 3

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	44	72
3'X5' TYPE S INLET		



GENERAL NOTES:

The inlets shall be constructed in conformance with Section 670, Drop Inlets.

Design Loading: HS 20 - 44 and Alternate Loading.

Unit Stresses: Concrete $f'c$ = 1600 p.s.i.
Reinforcing Steel f_s = 24000 p.s.i.

All reinforcing steel shall be Grade 60.

Structural steel shall conform to ASTM A36.

The 3/4" dia. Headed Type A Steel Studs shall conform to Section 7 of the current edition of the AWS D1.1 Structural Steel Welding Code.

After welding is complete, galvanize the angle and steel studs in accordance with AASHTO M111 (ASTM A123).

Use 1" clear cover on all reinforcing steel except as shown.

Cut and bend reinforcing steel in field as necessary to fit pipe and manhole openings; such openings are not shown in these details. The number, size, and location of pipe entering the drop inlet are shown elsewhere in the plans.

All costs for the angle, headed studs, welding, and galvanizing shall be incidental to the contract unit price per cubic yard for "Class M6 Concrete".

Cast iron frame and lid shall conform to AASHTO M105, Class 30.

The dimension of H is in feet.

SPECIFICATION NOTES:

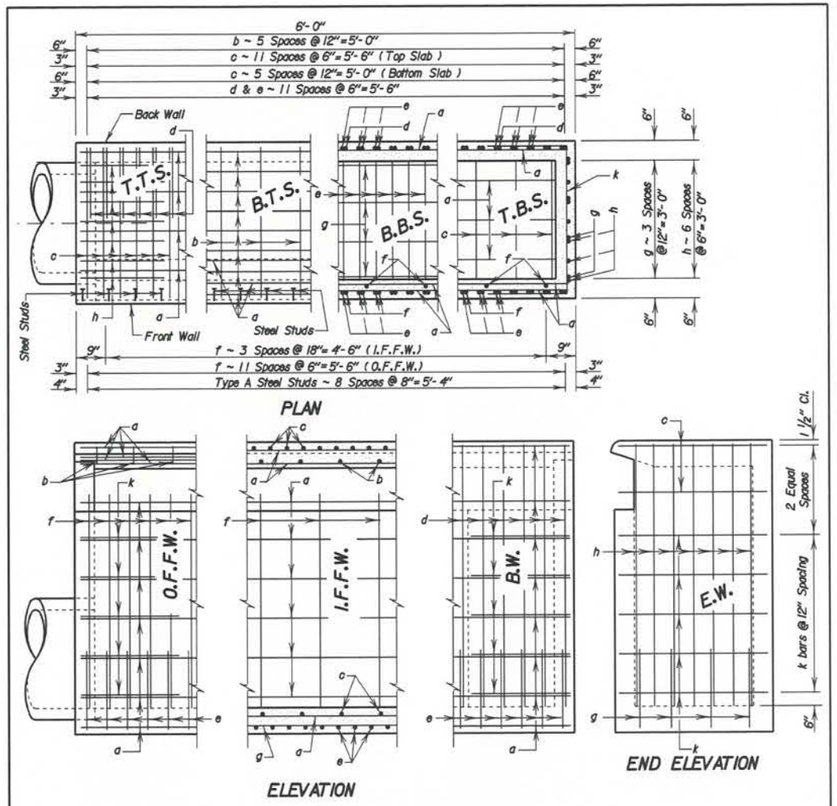
Design Specifications: A.A.S.H.T.O. Standard Specifications for Highway Bridges, 1996 Edition. (Service Load)

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition.

DROP INLETS FOR 18" TO 30" DIAMETER PIPE

September 14, 2005

Published Date: 4th Qtr. 2009	SDDOT	3'X 5' TYPE S REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.30
			Sheet 1 of 3



LEGEND FOR PLACING RE-STEEL
T.T.S. - Top of Top Slab
B.T.S. - Bottom of Top Slab
T.B.S. - Top of Bottom Slab
B.B.S. - Bottom of Bottom Slab
O.F.F.W. - Outside Face of Front Wall
I.F.F.W. - Inside Face of Front Wall
B.W. - Back Wall
E.W. - End Wall

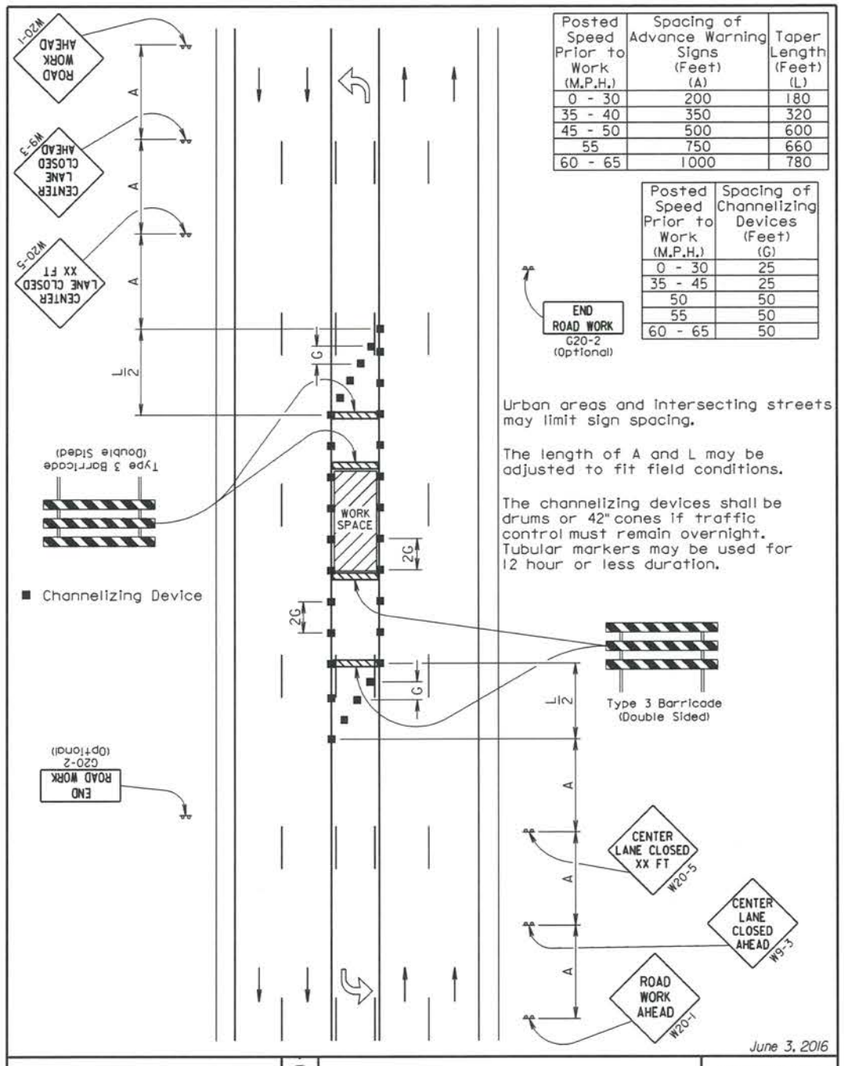
PIPE DISPLACEMENT REDUCTIONS
For pipes perpendicular to wall.

Pipe Size Inches		T Inches	Class M6 Concrete Cu'd
R.C. Pipe	18	2 1/2	0.05
	21	2 3/4	0.07
	24	3	0.09
	27	3 1/4	0.11
	30	3 1/2	0.14
R.C. Arch Pipe	24	3 1/2	0.09
Manhole			0.12

September 14, 2005

Published Date: 4th Qtr. 2009	SDDOT	3'X 5' TYPE S REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.30
			Sheet 2 of 3

PROJECT	SHEET NO.	TOTAL SHEETS
2019–005	45	72
TRAFFIC CONTROL & JUNCTION BOX		



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50
55	50
60 - 65	50

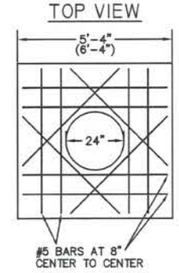
Urban areas and intersecting streets may limit sign spacing.

The length of A and L may be adjusted to fit field conditions.

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight. Tubular markers may be used for 12 hour or less duration.

Published Date: 1st Qtr. 2019	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES 5–LANE, CENTER LANE CLOSED
		PLATE NUMBER 634.55
June 3, 2016		Sheet 1 of 1

TOP VIEW



GENERAL NOTES

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION ,AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615, GRADE 60.

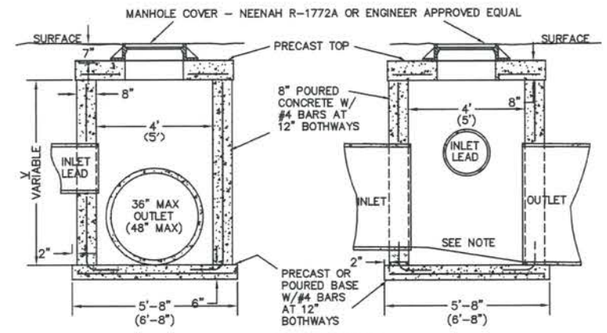
ALL REINFORCING STEEL SHALL BE CUT AND/OR BENT IN THE FIELD TO MAINTAIN A MINIMUM OF 2" COVER ON ALL REINFORCING STEEL.

NO VERTICAL CONSTRUCTION JOINTS ARE ALLOWED.

ALL CONC. SHALL BE CLASSED M–6.

UNIT STRESSES: CONCRETE Fc = 1600 P.S.I.
REINFORCING STEEL Fc = 20,000 P.S.I.

TOP OF MANHOLE COVER TO BE SET FLUSH WITH FINISHED SURFACE ELEVATION.



SIDE VIEWS

ESTIMATED QUANTITIES					
ITEM	UNIT	4' X 4' JCT. BOX		5' X 5' JCT. BOX	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	1.29	0.46V	1.93	0.56V
REINFORCEMENT–CONC. MASONRY	LBS.	103	23V	131	35V
MANHOLE RIM & COVER–AS SPECIFIED	EACH	1	-----	1	-----

* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS;
12" DIA.=–0.03 C.Y., 15" DIA=–0.04 C.Y., 18" DIA.=–0.05 C.Y., 21" DIA.=–0.07 C.Y., 24" DIA.=–0.09 C.Y., 27" DIA.=–0.11 C.Y., 30" DIA=–0.14 C.Y., 33" DIA.=–0.17 C.Y., 36" DIA.=–0.20 C.Y., 42" DIA.=–0.26 C.Y., 48" DIA.=–0.34 C.Y.

NOTES:

COVER REINFORCEMENT REQUIRES 12–#5 BARS 5'(6") LONG TO BE PLACED AS SHOWN.
2" FROM CIRCULAR OPENING AND 8" CENTER TO CENTER AT A DEPTH OF 6" W/MIN. COVER THICKNESS OF 8".

FLOOR OF JCT. BOX TO BE FINISHED IN SUCH A MANNER TO INSURE UNINTERRUPTED FLOW THRU THE BOX.

WHEN PIPE SIZES DIFFER THRU JCT. BOX, TOP OF PIPE TO MATCH WHEN POSSIBLE.

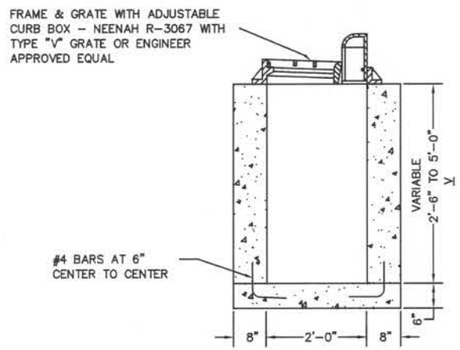
( ) INDICATES SPECIFICATIONS FOR A 5' X 5' JCT. BOX. MAXIMUM PIPE SIZE ALLOWED FOR 4' X 4' JCT. BOX IS 36" R.C.P. A 5' X 5' JCT. IS 48" R.C.P.
VARIABLE DEPTH UP TO 8'

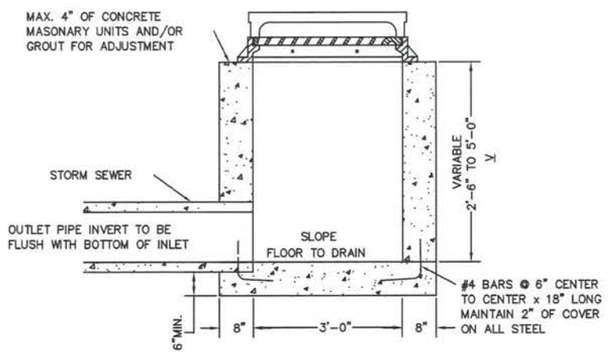
REVISED: DECEMBER 1995

SPECIFICATION REFERENCE NO. 460	CITY OF SIOUX FALLS ENGINEERING DIVISION STANDARD STORM SEWER JUNCTION BOX TYPE I	PLATE NUMBER 460.05

ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	0.27	0.32V
REINFORCEMENT-CONC. MASONRY	LBS	28	---

* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS; 12" DIA.=-0.03 C.Y., 15" DIA=-0.04 C.Y., 18" DIA.=-0.05 C.Y., 24" DIA.=-0.09 C.Y.



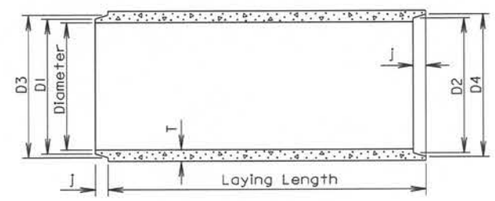


REVISED: DECEMBER 1995

SPECIFICATION REFERENCE NO. 460	CITY OF SIOUX FALLS ENGINEERING DIVISION STANDARD STORM SEWER INLET TYPE BI	PLATE NUMBER 460.07

TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or 3/8" whichever is more for 27" Dia. or greater.
Diameters at Joints: ±3/16" for 30" Dia. or less and ±1/4" for 36" or greater.
Length of joint (J): ±1/4".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than 1/2".



LONGITUDINAL SECTION

END VIEW

GENERAL NOTES:

Construction of R.C.P. shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

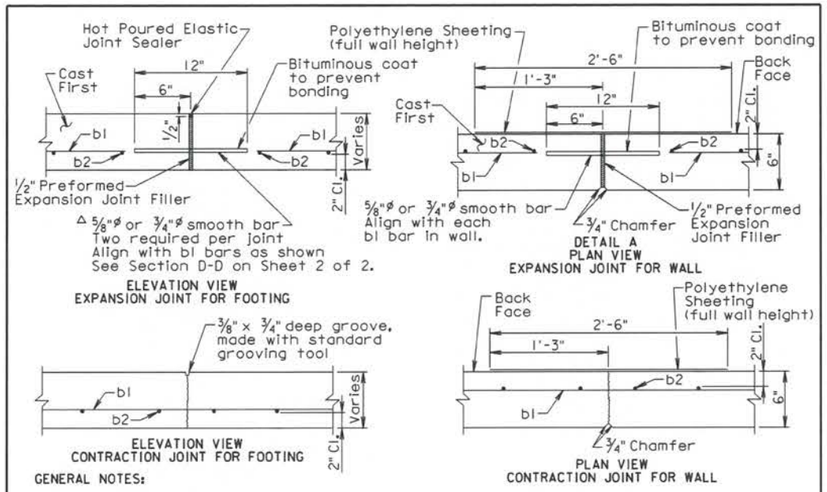
Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 1/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

March 31, 2000

Published Date: 1st Qtr. 2012	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01 Sheet 1 of 1

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	47	72
TYPE C RETAINING WALL		



GENERAL NOTES:

The Type C Concrete Retaining Wall shall be placed adjacent to pavement or curb and gutter as shown in Section D-D on sheet 2 of 2.

* The sidewalk width of the Type C Concrete Retaining Wall shall not be wider than 8 feet or narrower than 5 feet. See plans for specified width.

In the areas where the retaining wall footing is to be placed, a 2 inch thickness of cushion material shall be placed and compacted. The cushion material shall conform to Section 651.2 C of the Specifications.

All concrete shall be Class M6 and conform to Section 462 of the Specifications.

All reinforcing steel shall be epoxy coated and shall conform to ASTM A615, Grade 60. The smooth bar may conform to ASTM A615, Grade 40. The epoxy coating shall conform to ASTM A775.

For variable height walls, the top b1 bar shall be placed parallel to the top of the wall.

The b1 bars shall be lapped a minimum of 12 inches.

A ¾ inch chamfer shall be provided on all exposed retaining wall edges.

Use Detail B on sheet 2 of 2 for constructing corners in the retaining wall.

The maximum expansion joint spacing shall be 90 feet and the maximum contraction joint spacing shall be 30 feet. The contraction and expansion joints shall be placed to match pavement or curb joints where possible.

The exposed retaining wall surfaces shall receive a finish in accordance with 460.3 L of the Specifications. The exposed surface of the retaining wall footing, when used as a sidewalk, shall receive a broom finish.

The Type C Concrete Retaining Wall shall be measured to the nearest square foot of front face area of the wall. The front face of the footing is excluded from the measurement.

All costs for excavation, furnishing and placing backfill and cushion material, labor, equipment, preformed expansion joint filler, all reinforcing steel including the smooth bars, and all concrete except in the areas of PCC driveway and approach pavement, shall be incidental to the contract unit price per square foot for "Type C Concrete Retaining Wall".

The concrete used for the retaining wall footing that extends into the approach and/or driveway pavement shall be paid for at the contract unit price per square yard for the corresponding "PCC Approach Pavement" and/or "PCC Driveway Pavement" bid items.

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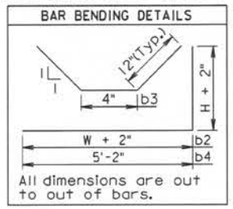
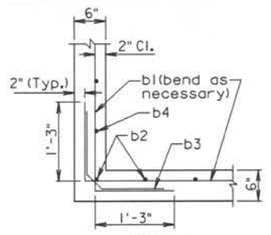
			Sheet 1 of 2

Use No. 4 bars for all reinforcing steel unless specified otherwise.

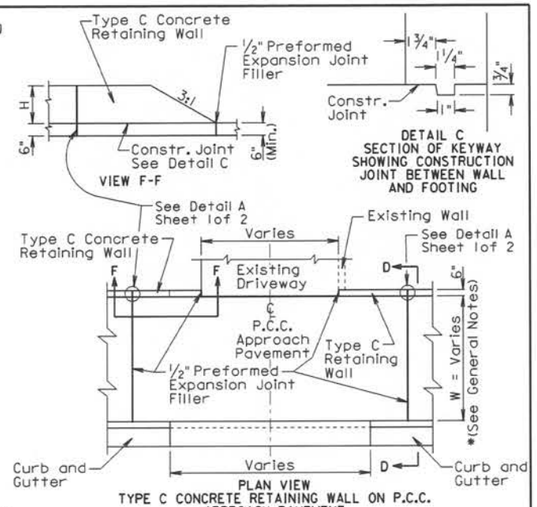
BAR BENDING DETAILS

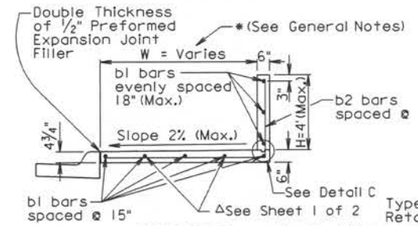


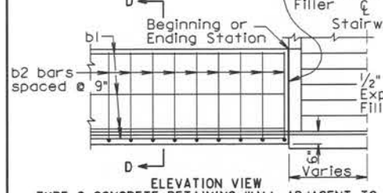
All dimensions are out to out of bars.



DETAIL B
PLAN VIEW OF WALL CORNER DETAIL



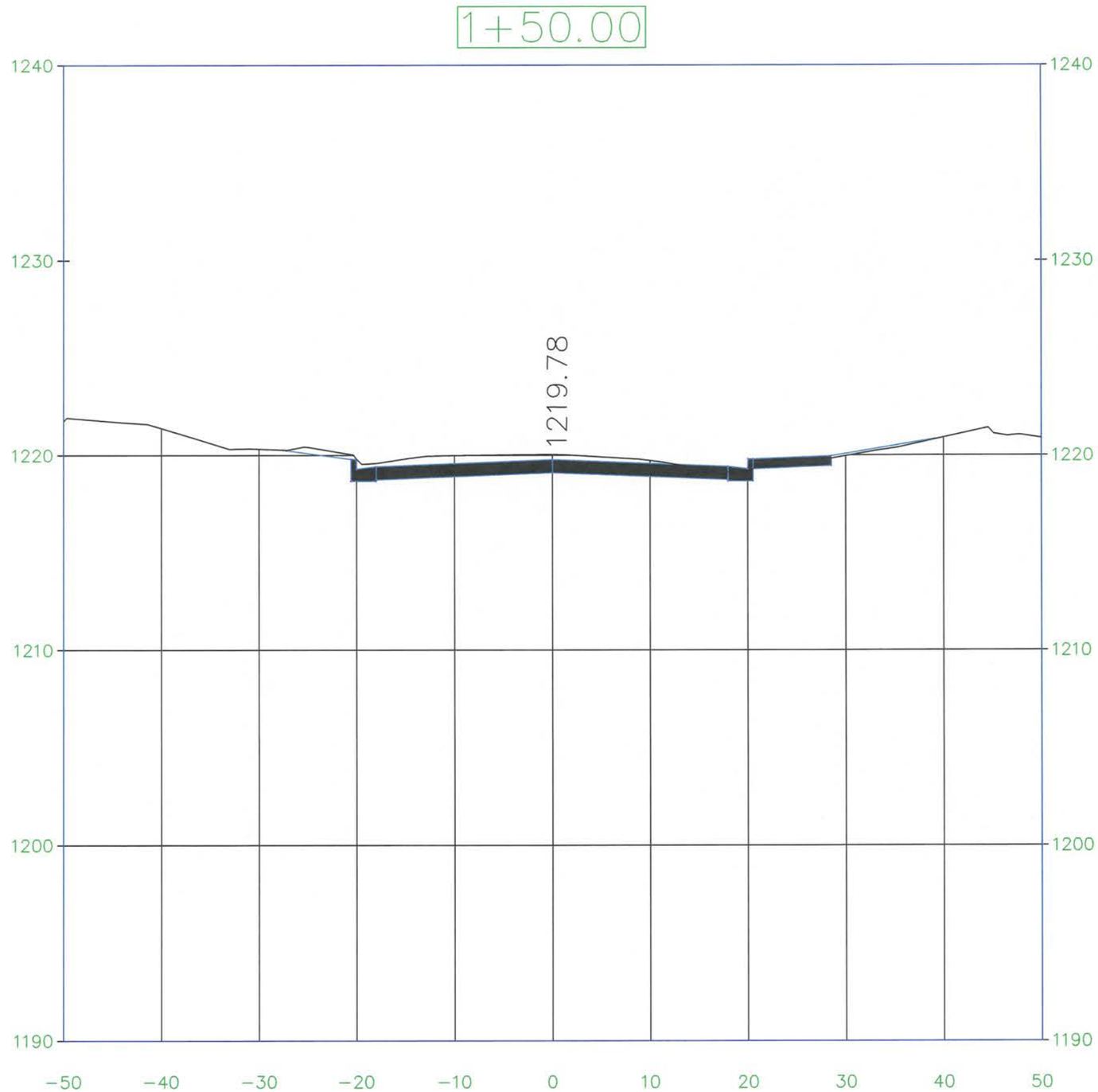




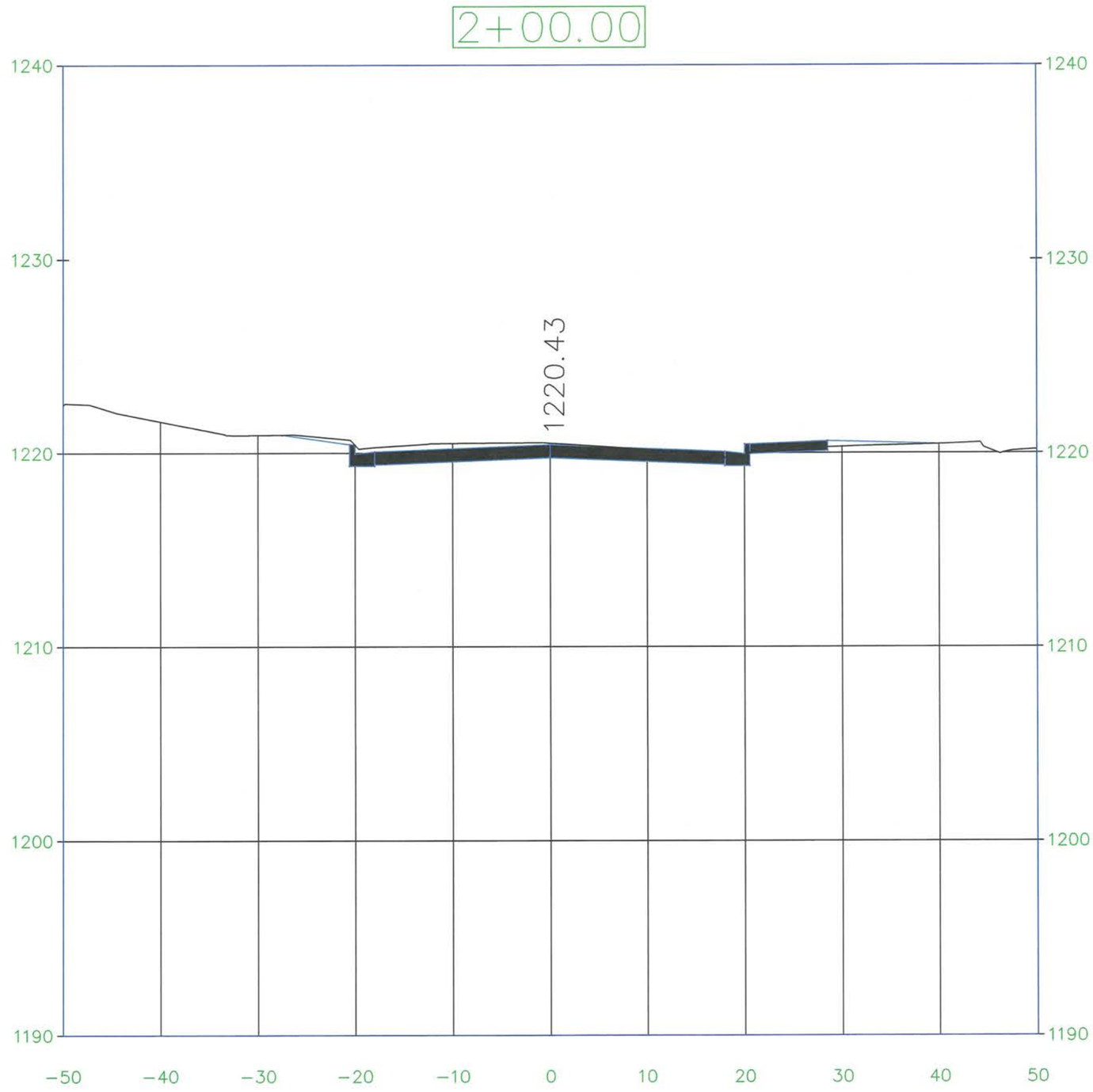
June 26, 2018

Published Date: 1st Qtr. 2019	SDDOT	TYPE C CONCRETE RETAINING WALL	PLATE NUMBER 530.01
			Sheet 2 of 2

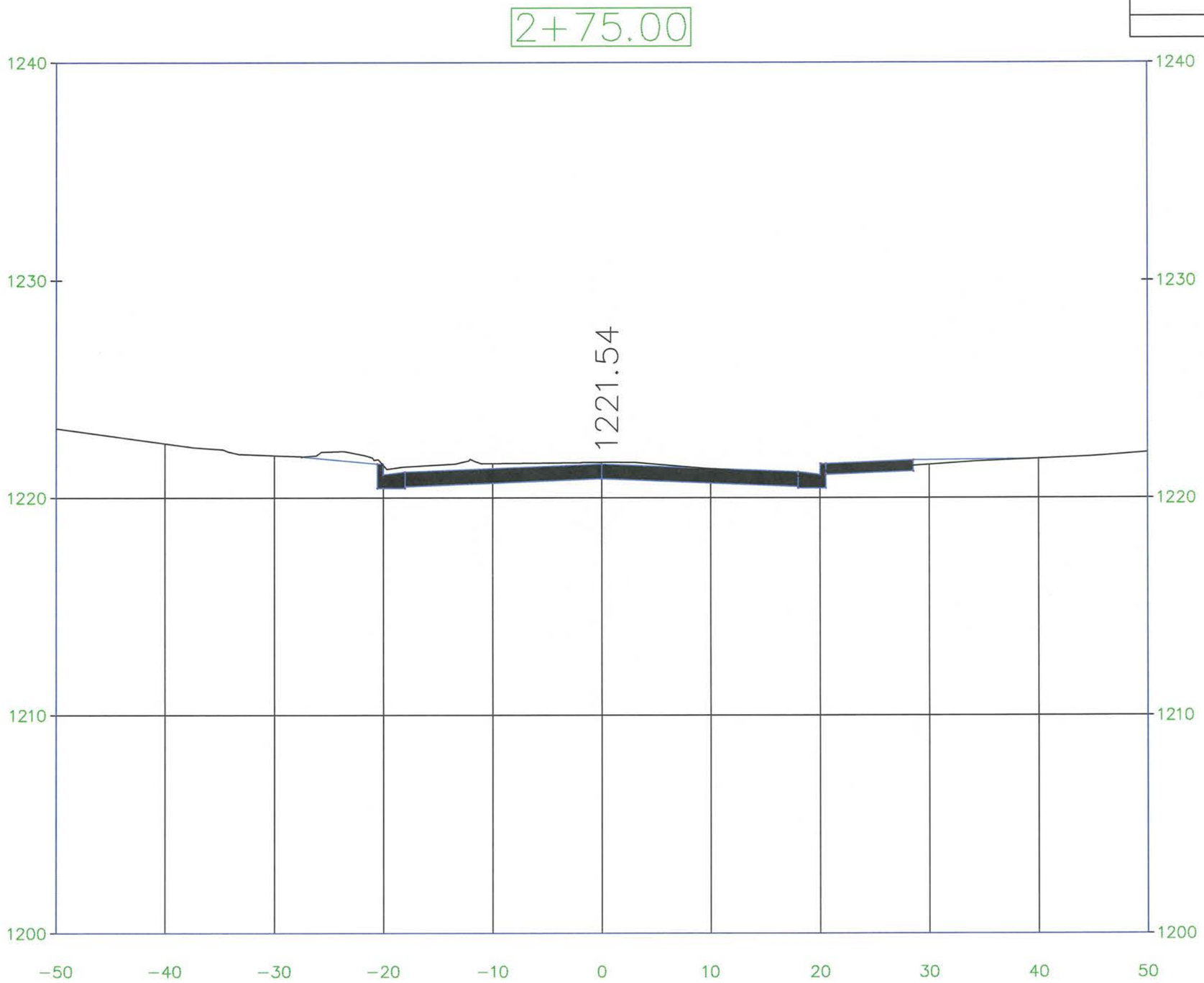
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	48	72
X-SECTIONS		



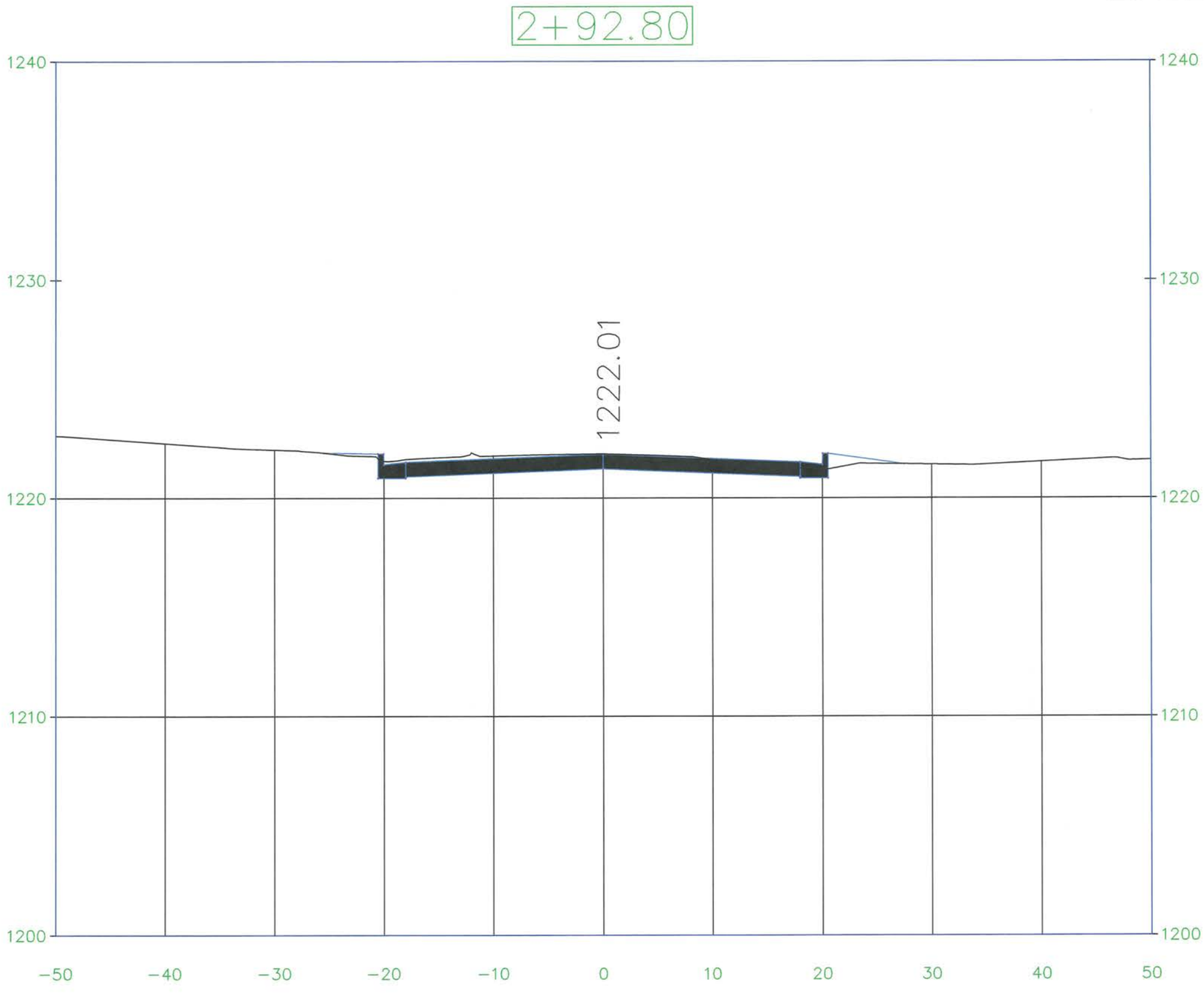
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	49	72
X-SECTIONS		



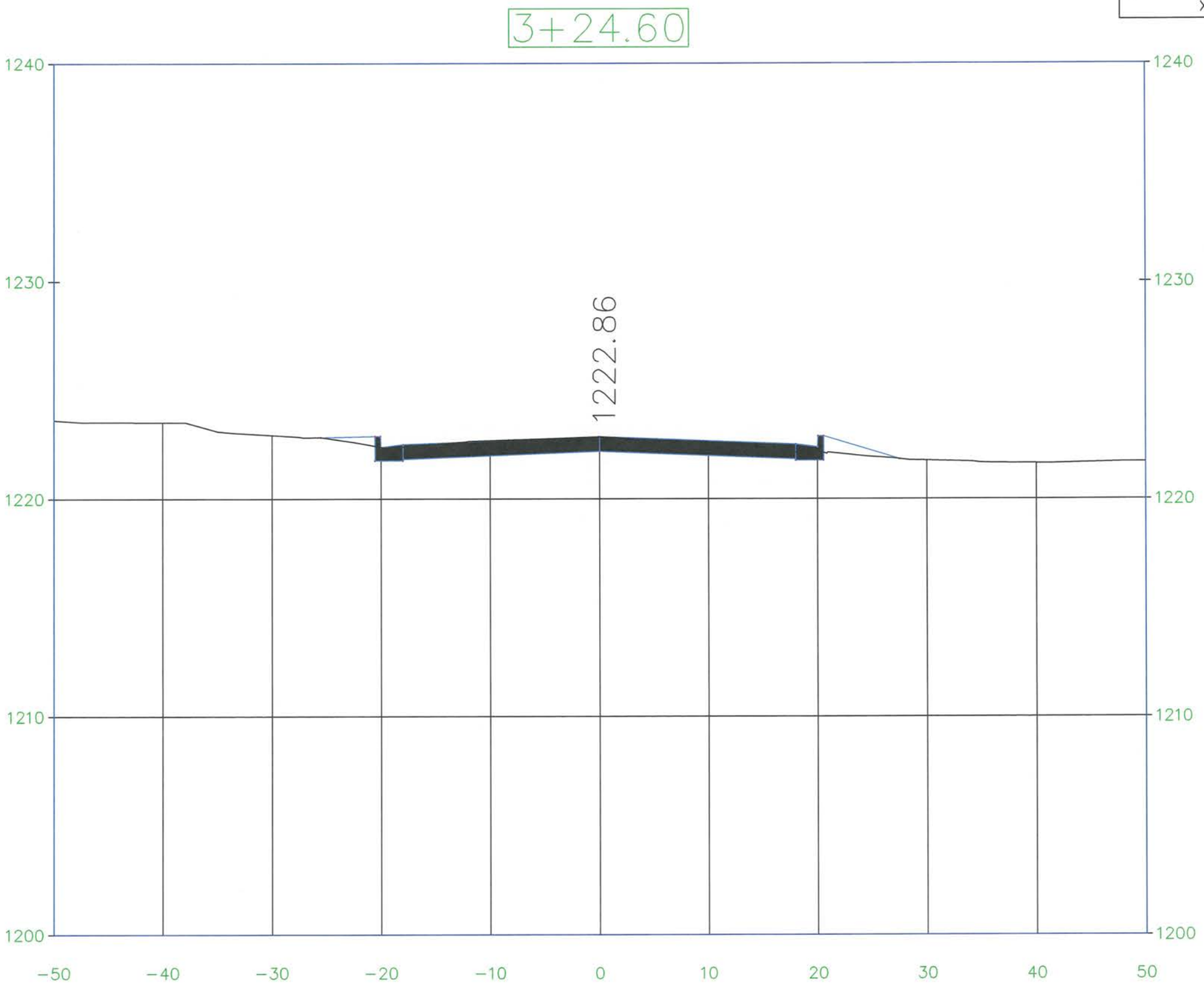
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	50	72
X-SECTIONS		



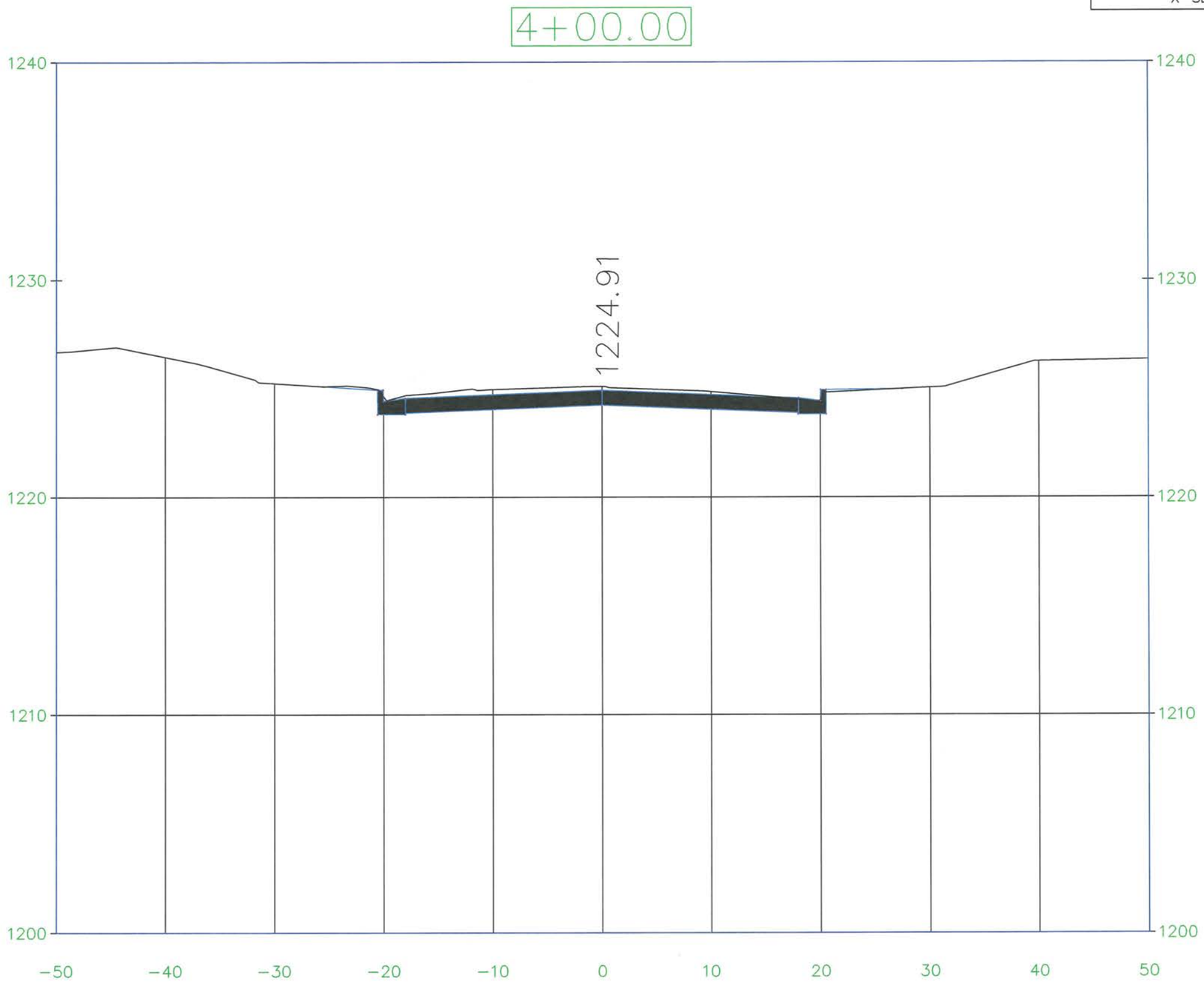
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	51	72
X-SECTIONS		



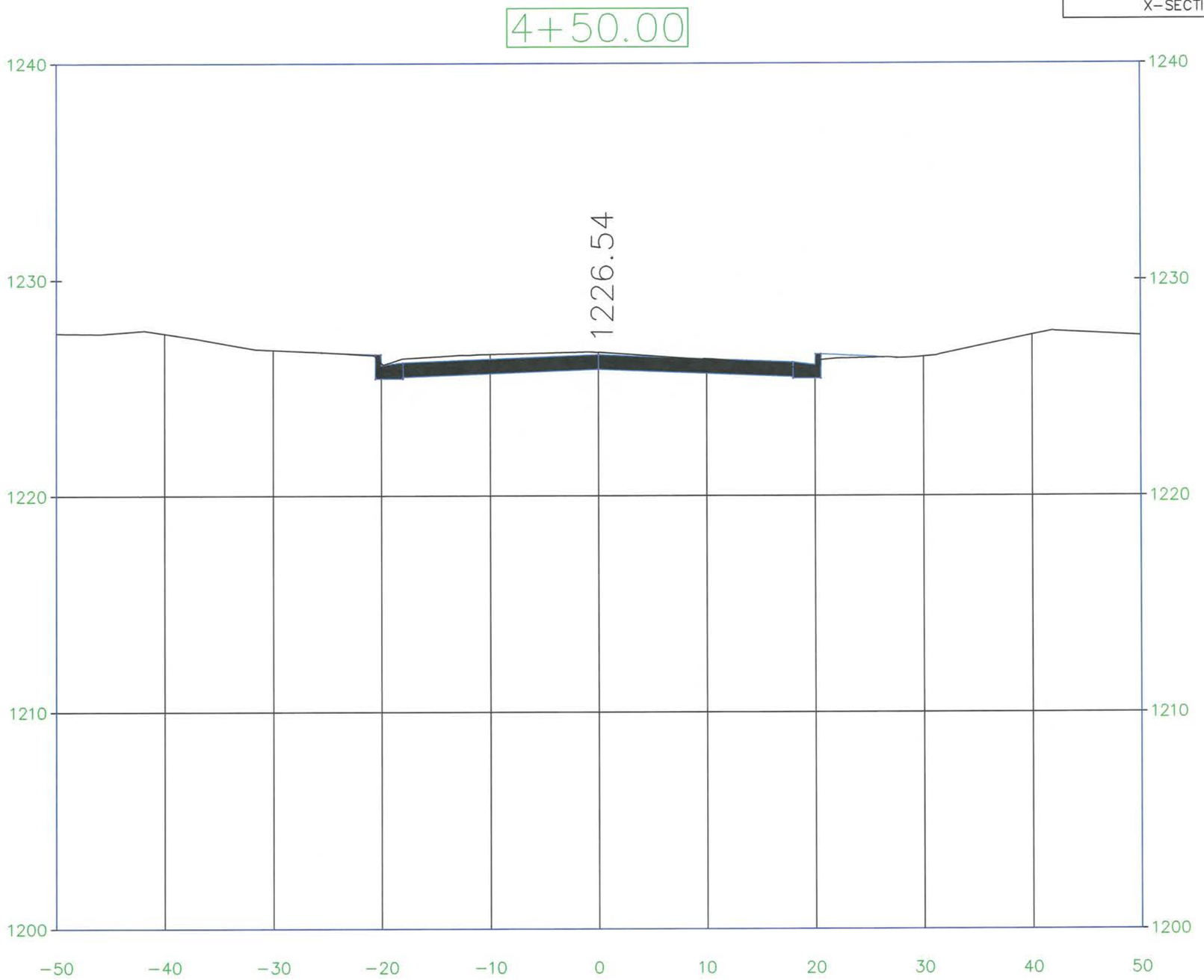
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	52	72
X-SECTIONS		



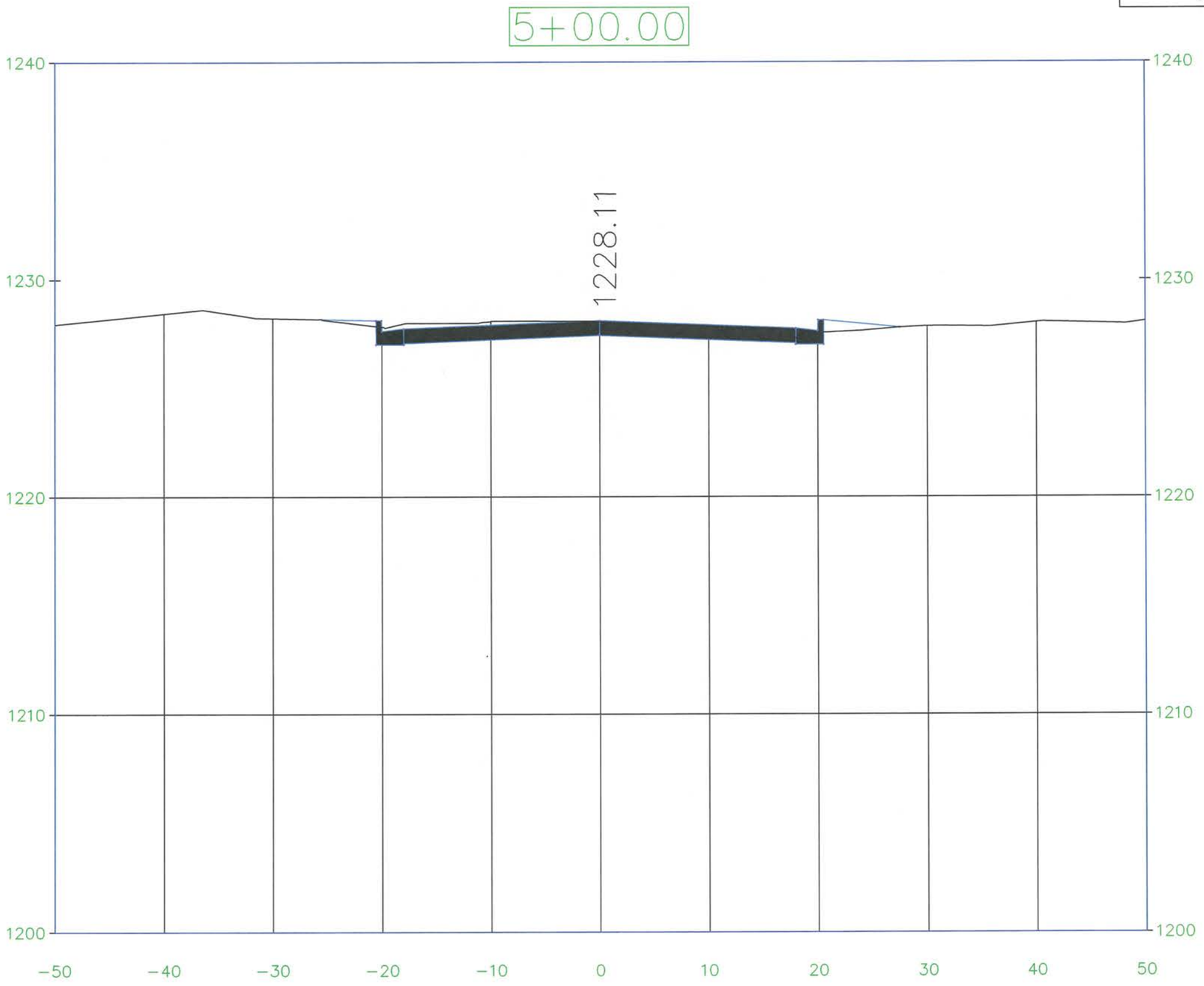
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	53	72
X-SECTIONS		



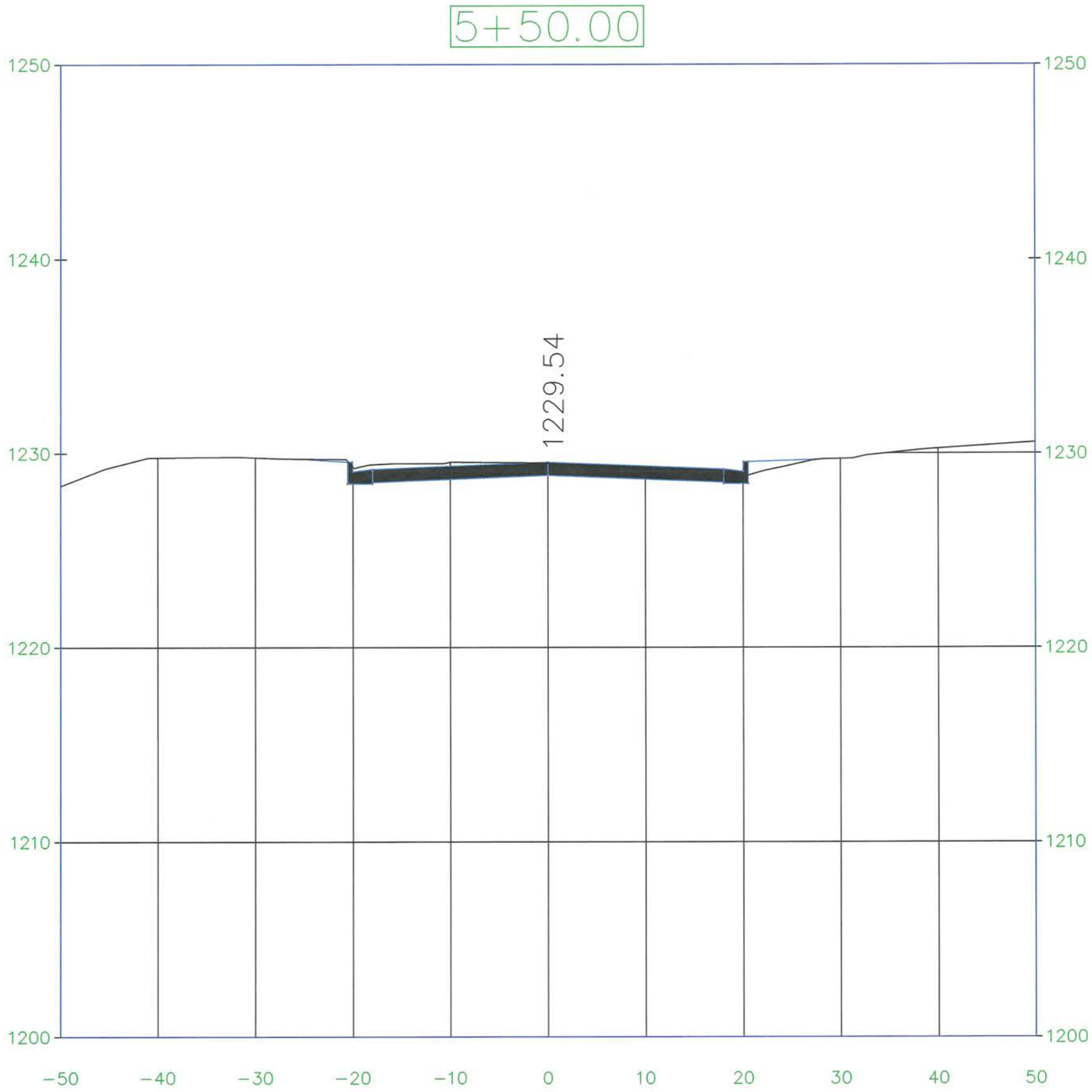
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	54	72
X-SECTIONS		



PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	55	72
X-SECTIONS		



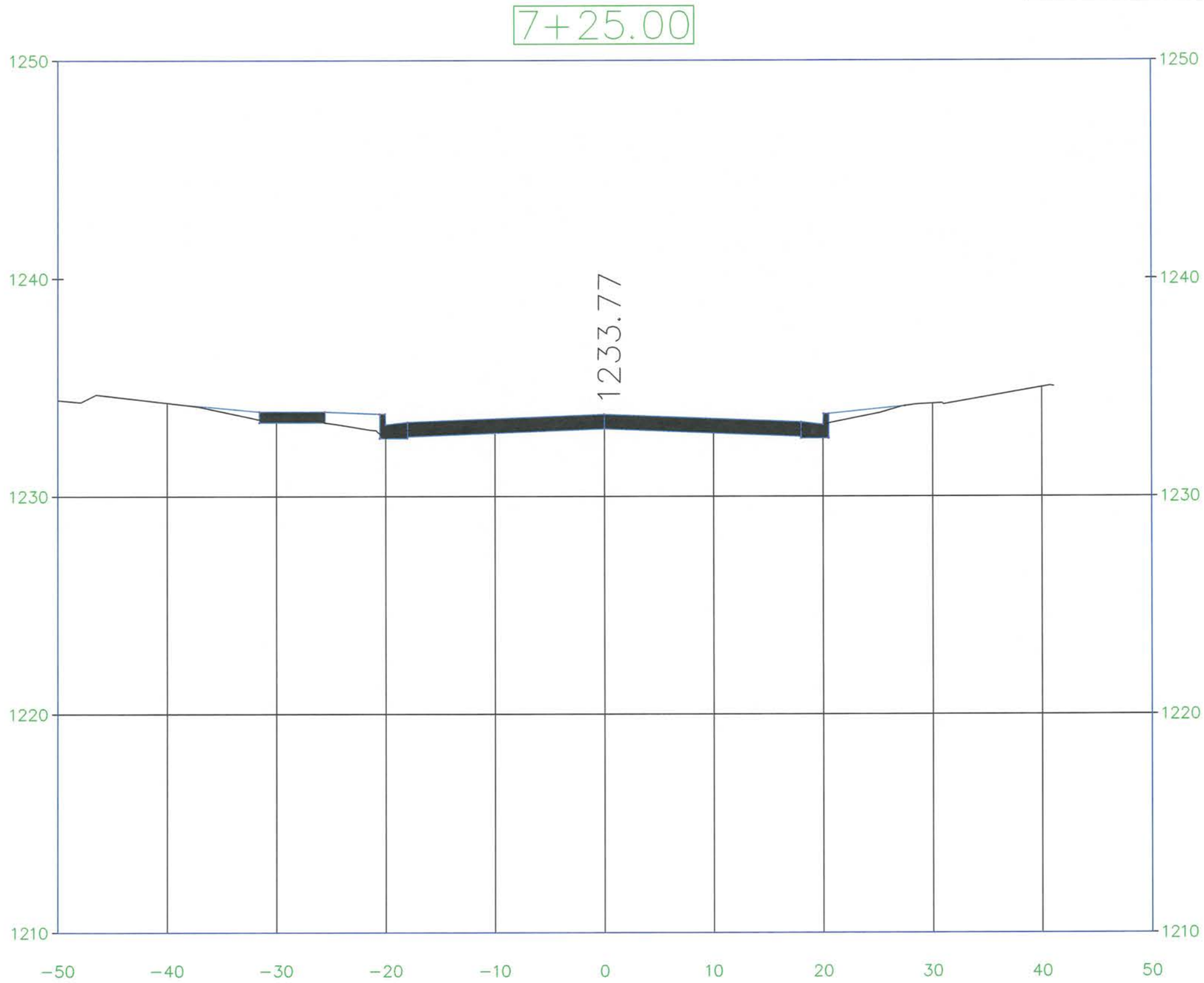
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	56	72
X-SECTIONS		



PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	57	73
X-SECTIONS		

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	58	73
X-SECTIONS		

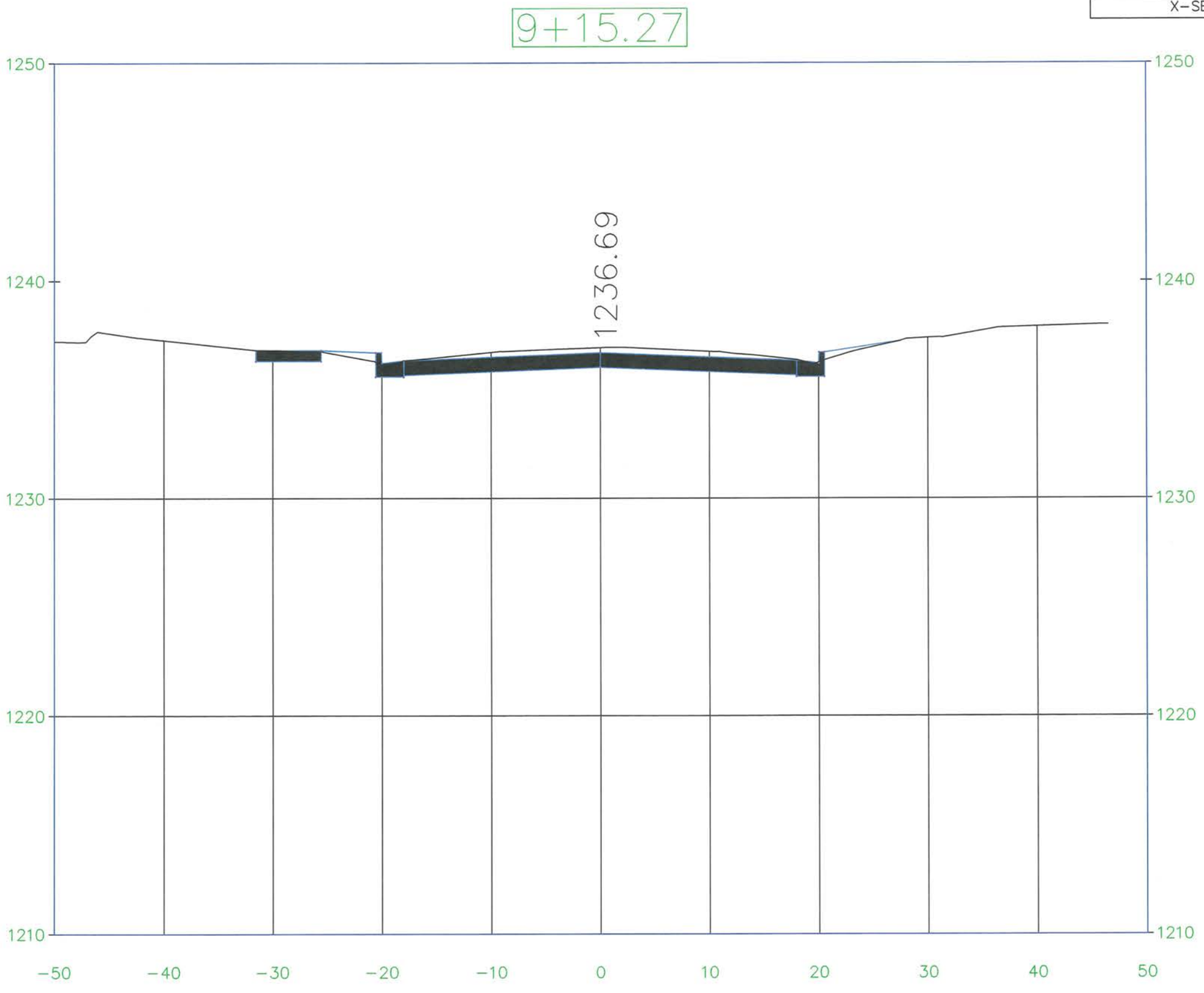
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	59	73
X-SECTIONS		



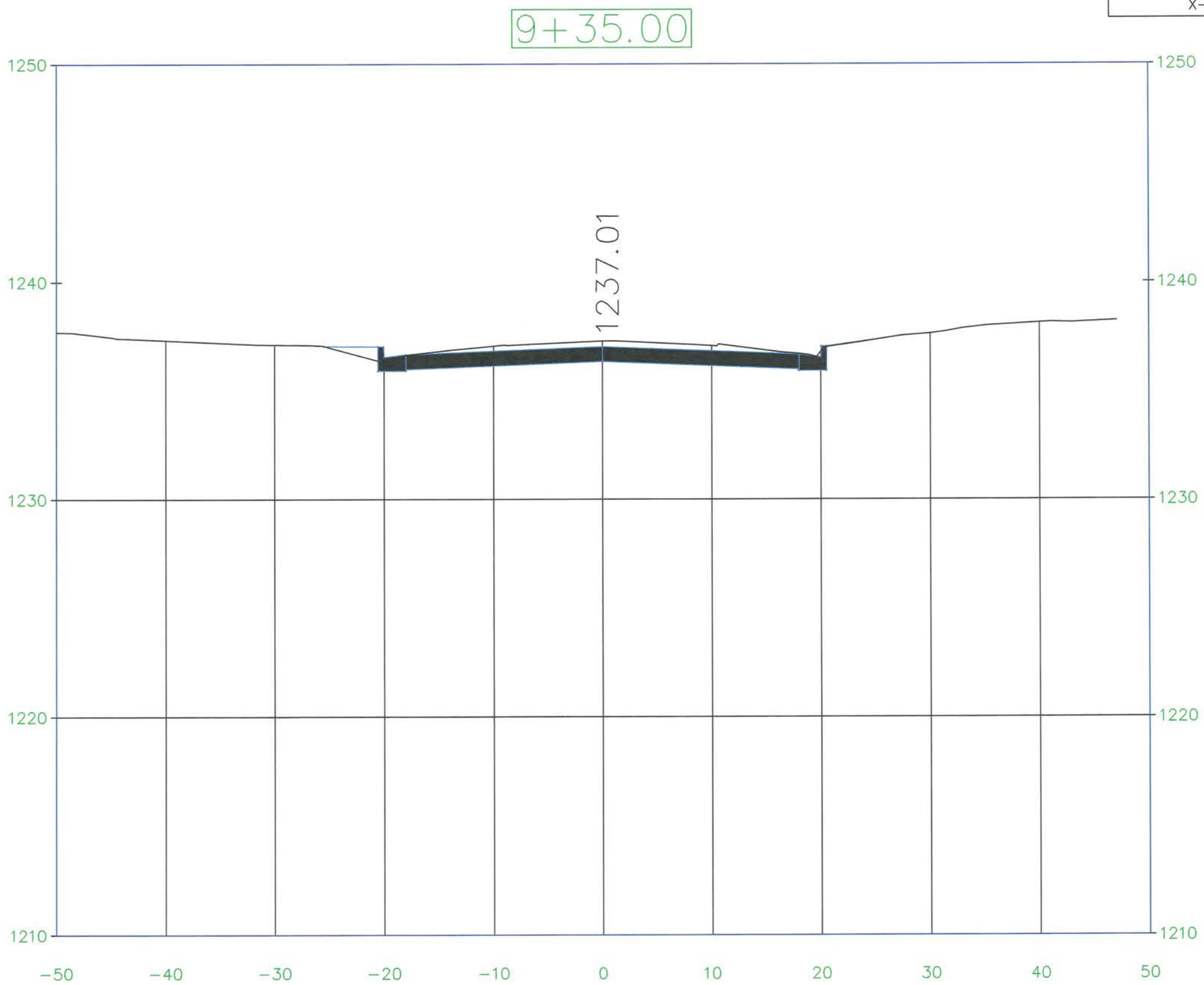
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	60	73
X-SECTIONS		

PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	61	73
X-SECTIONS		

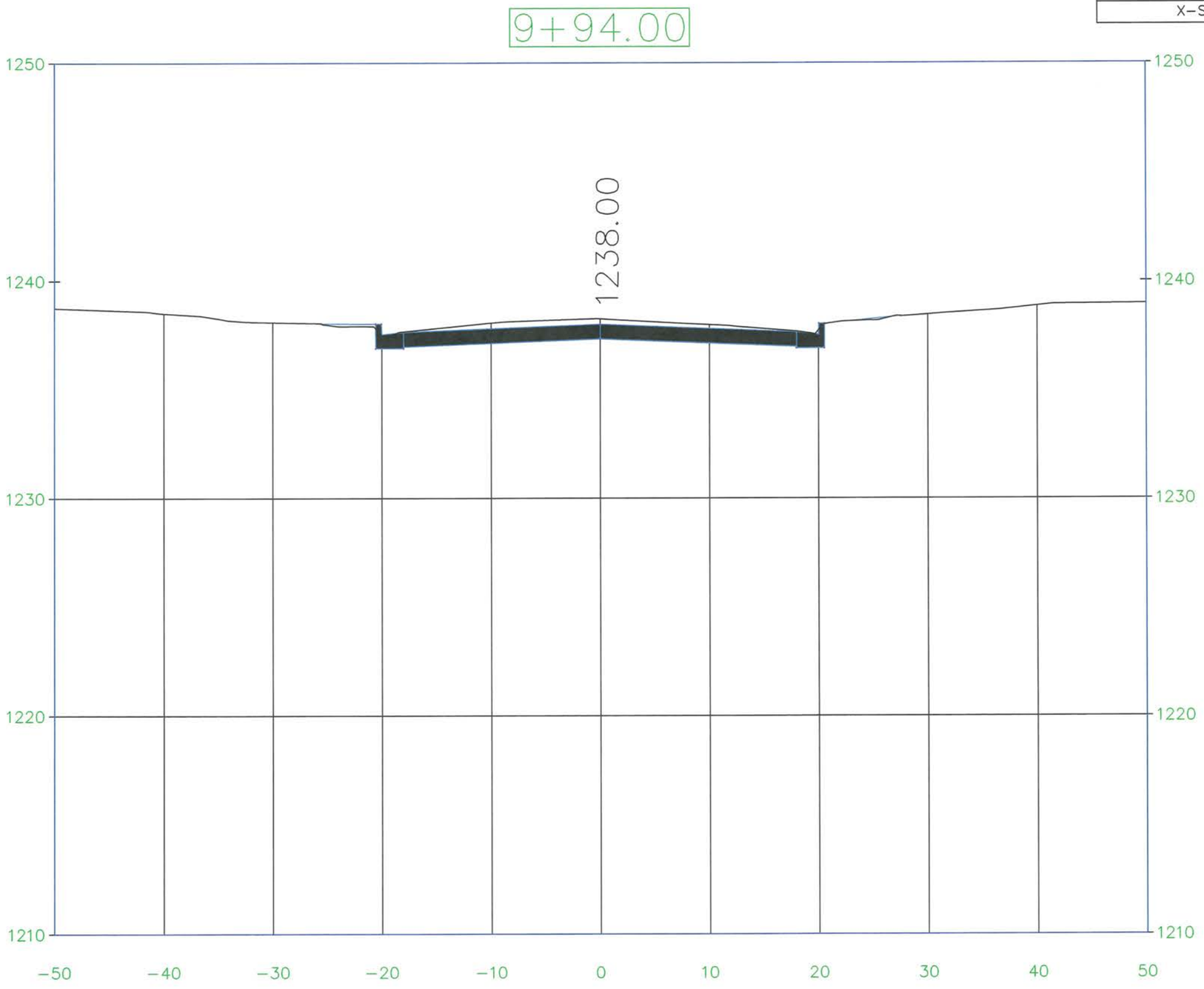
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	62	73
X-SECTIONS		



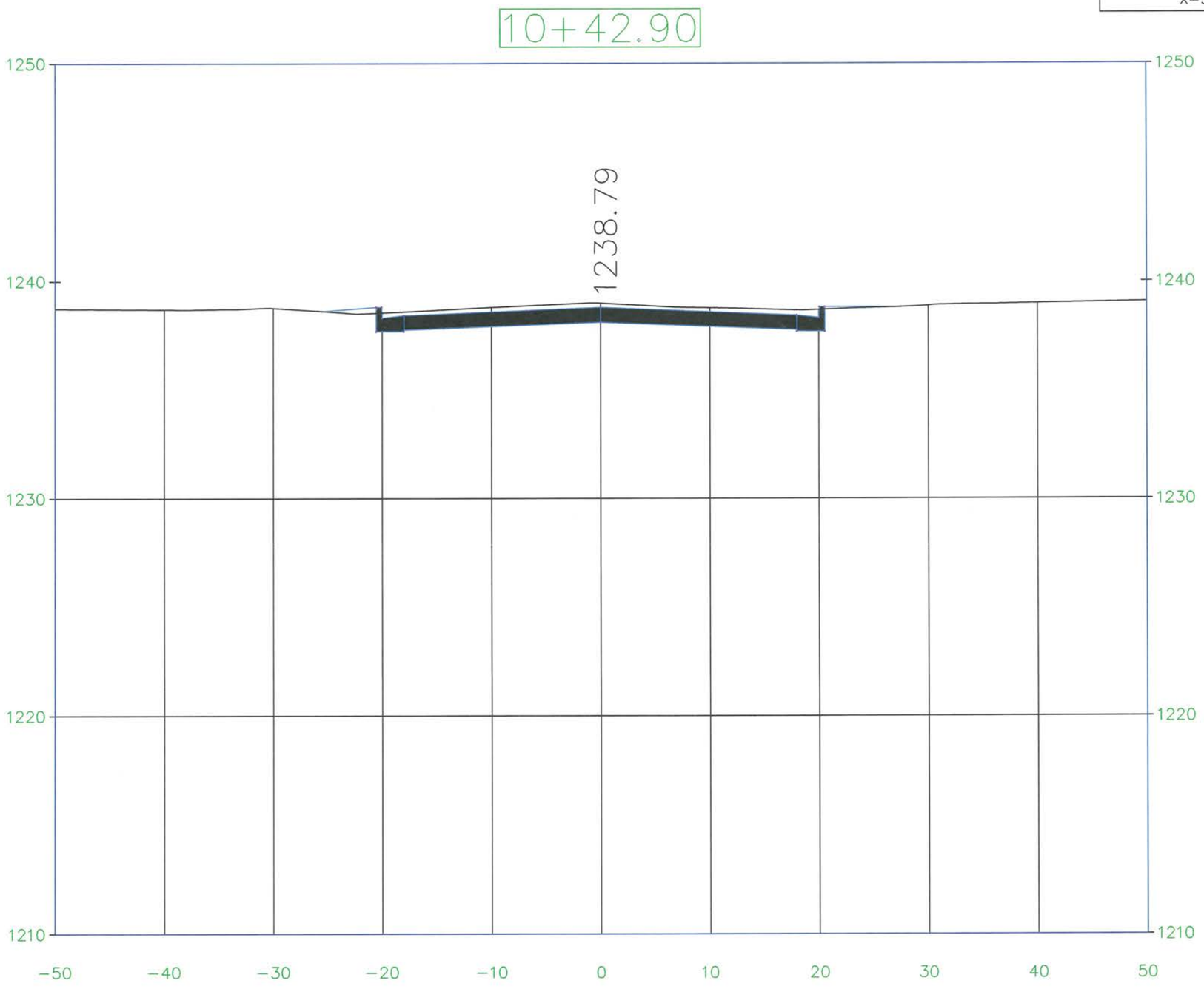
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	63	72
X-SECTIONS		



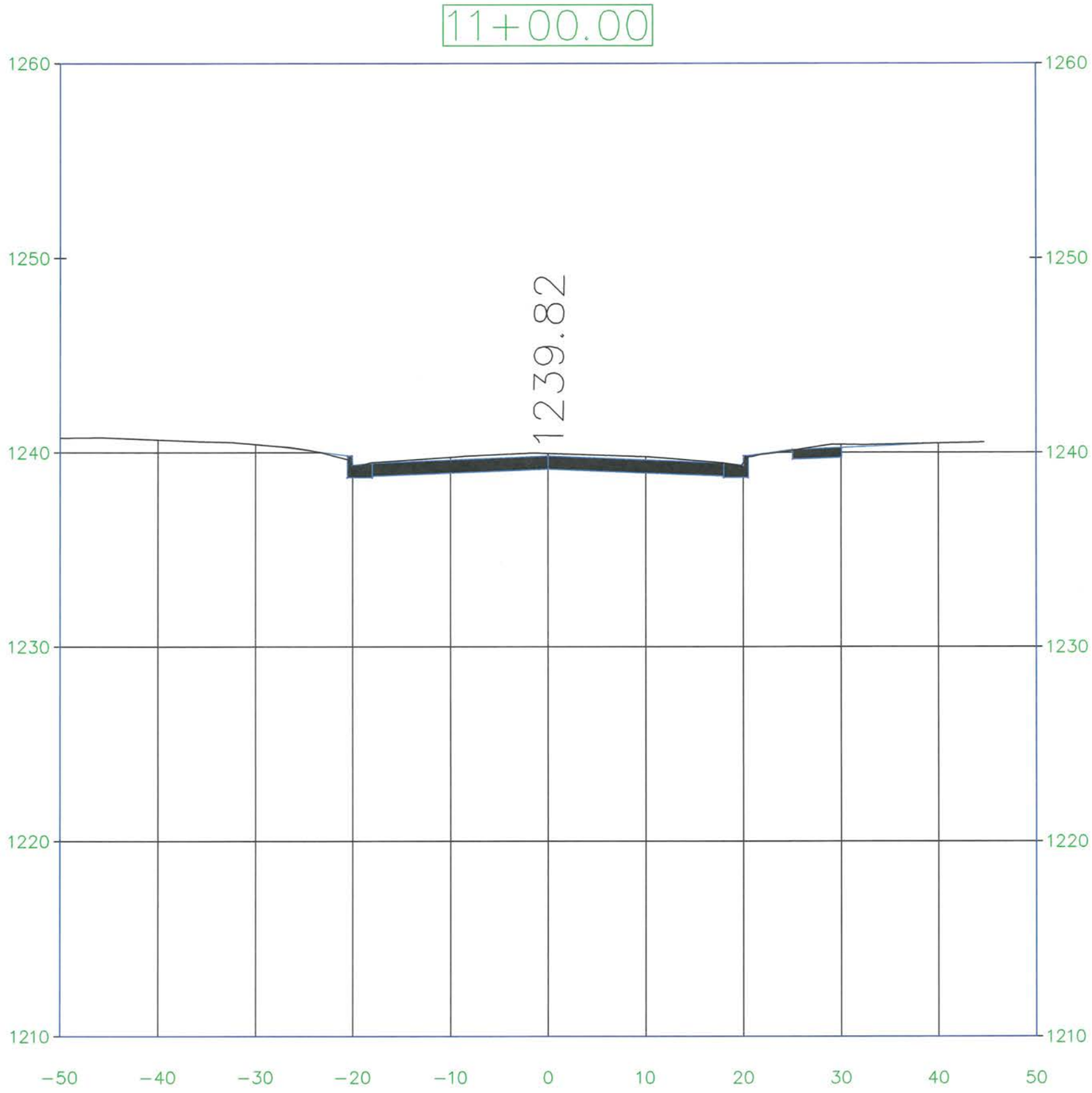
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	64	72
X-SECTIONS		



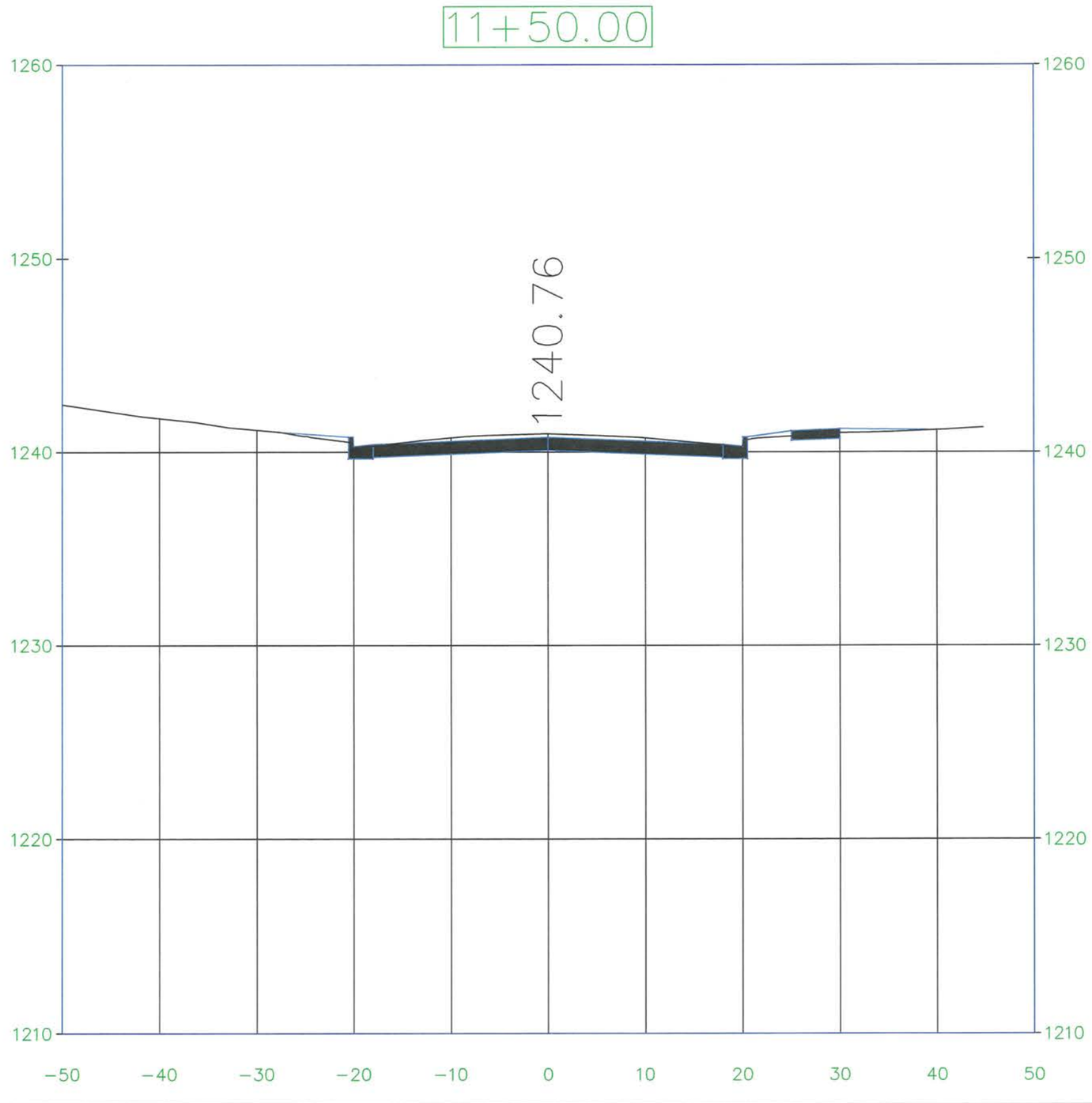
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	65	72
X-SECTIONS		



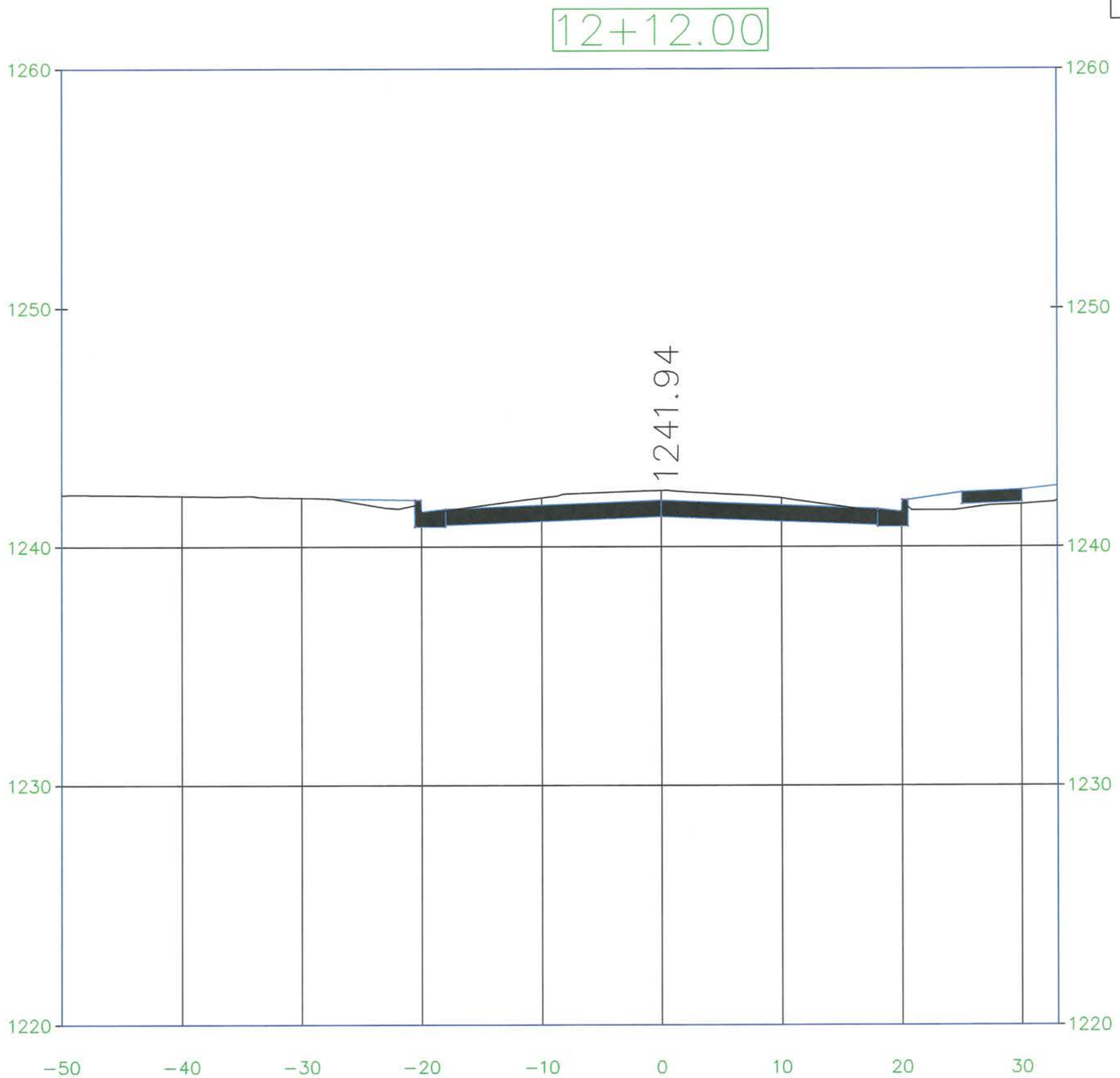
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	66	72
X-SECTIONS		



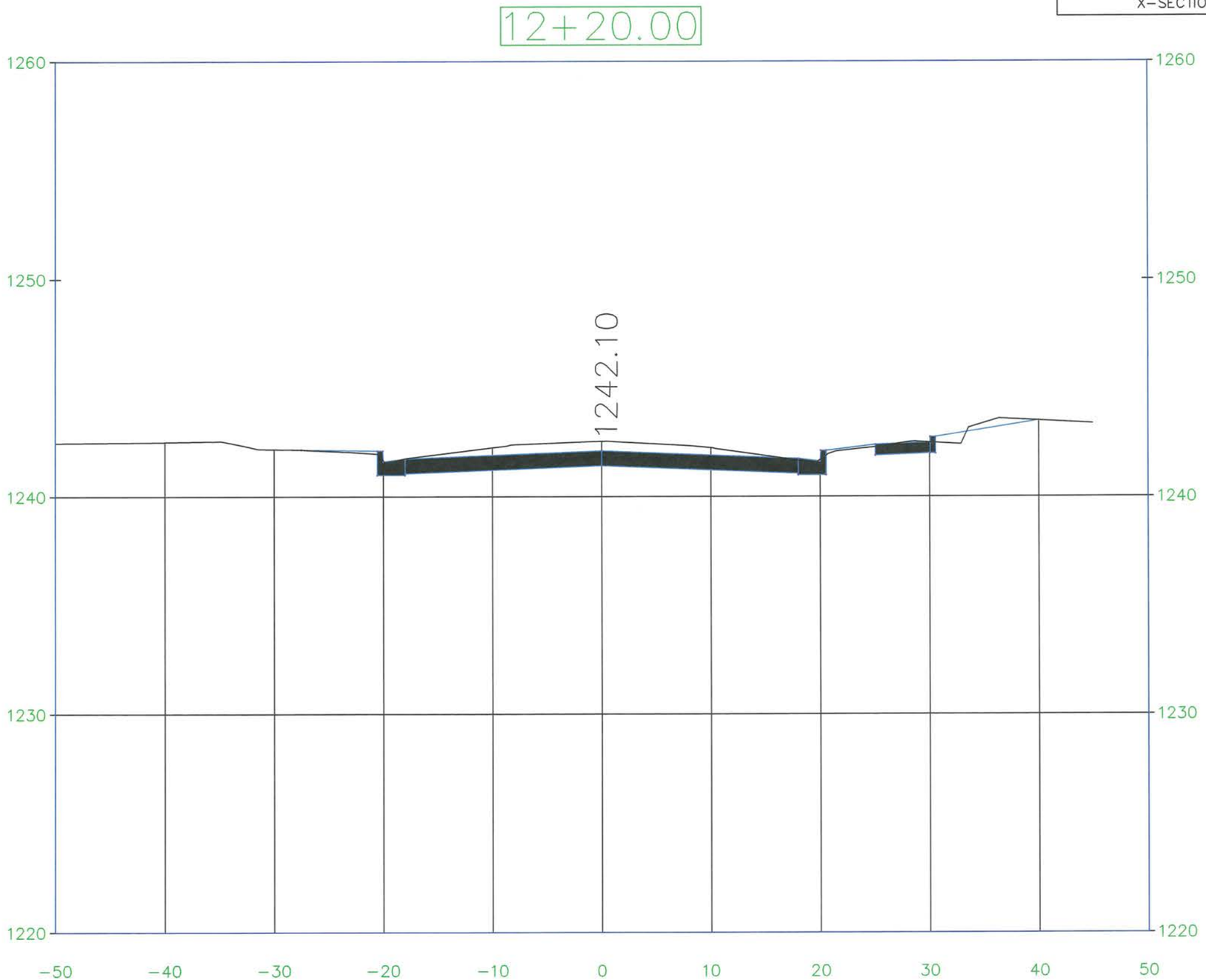
PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	67	72
X-SECTIONS		



PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	68	72
X-SECTIONS		

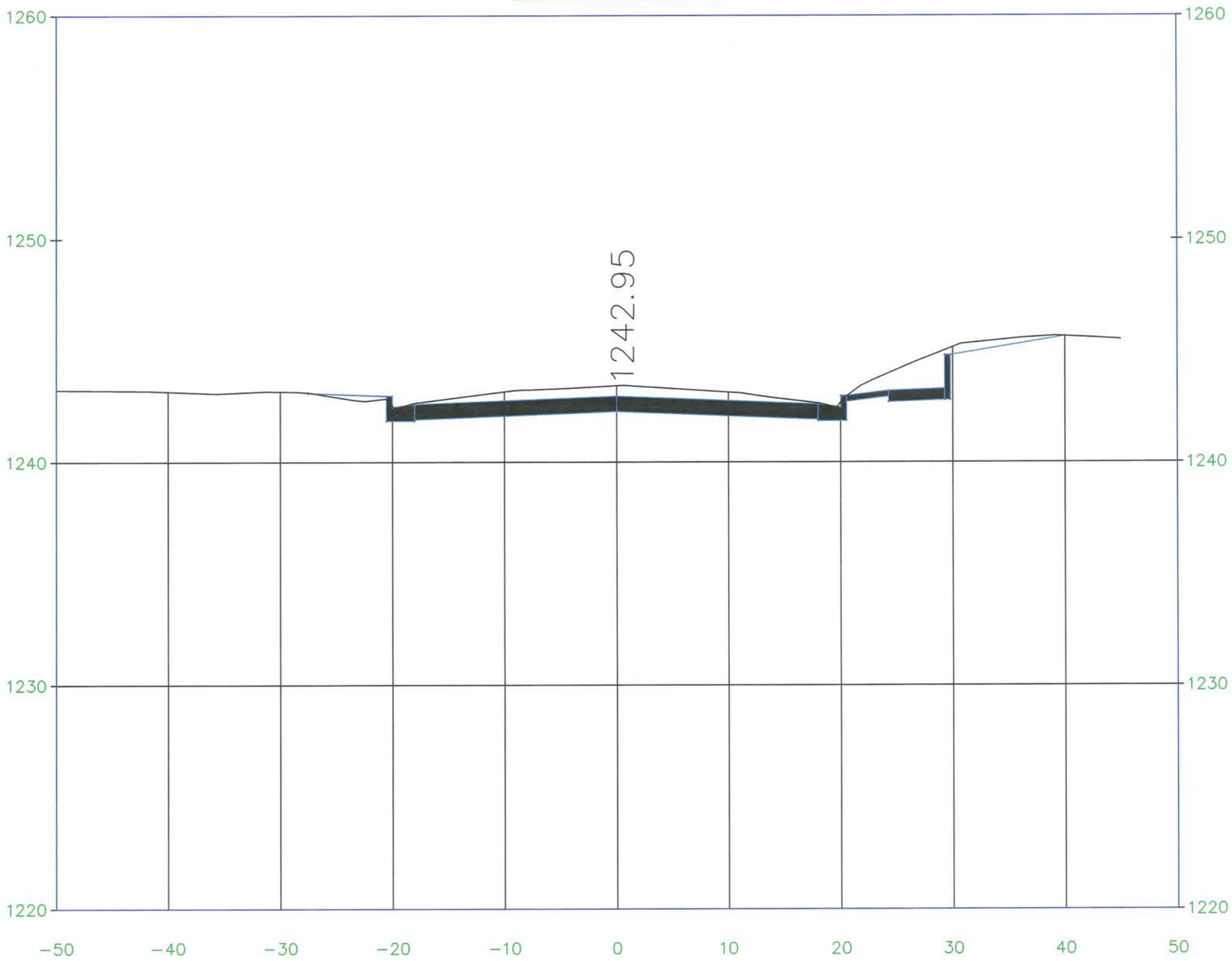


PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	69	72
X-SECTIONS		

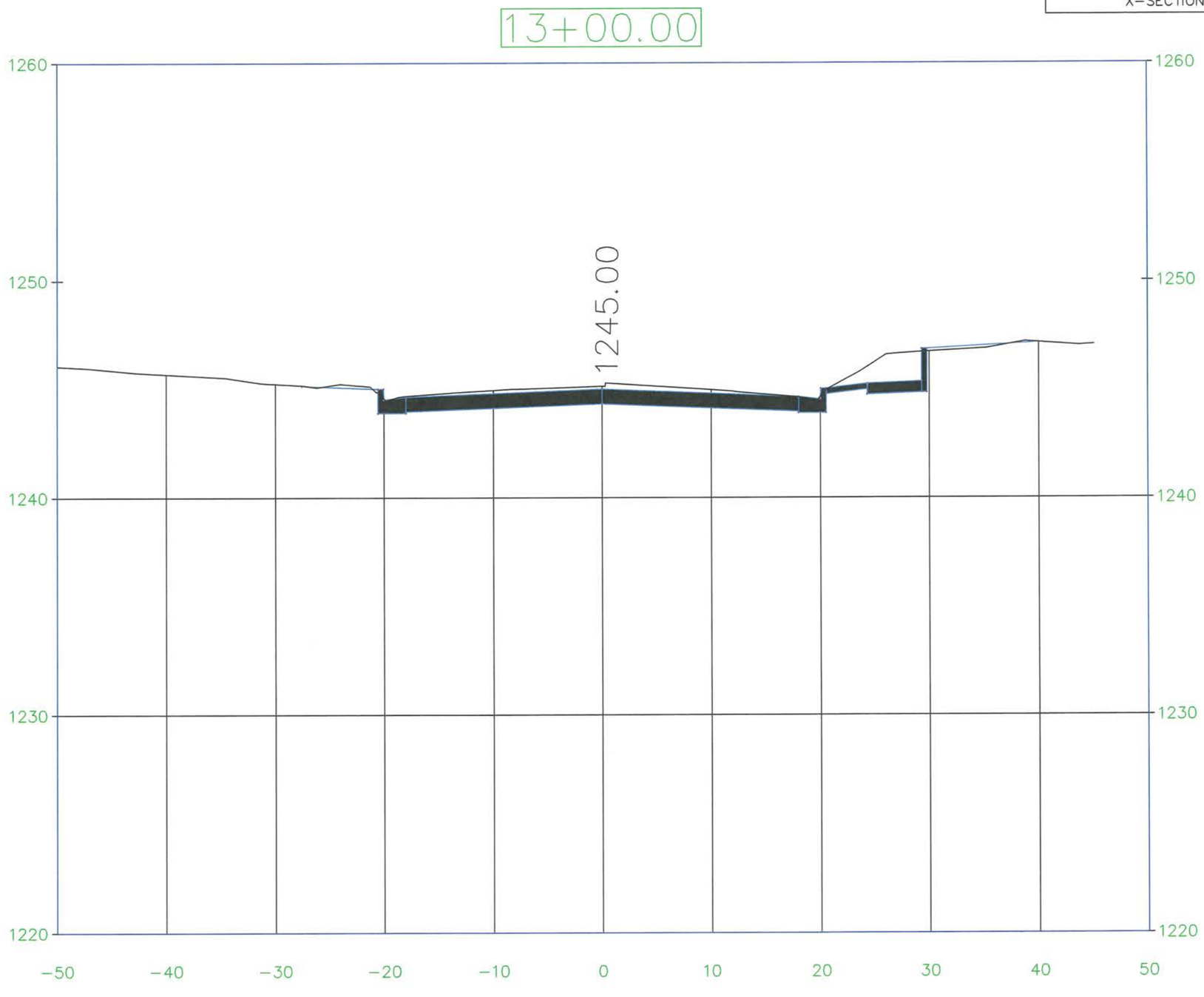


PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	70	72
X-SECTIONS		

12+50.00



PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	71	72
X-SECTIONS		



PROJECT	SHEET NO.	TOTAL SHEETS
2019-005	72	72
X-SECTIONS