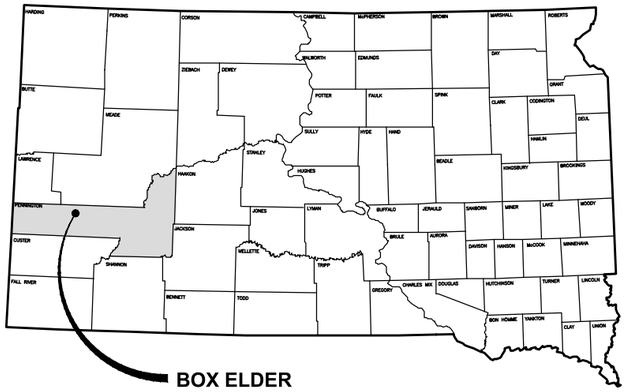
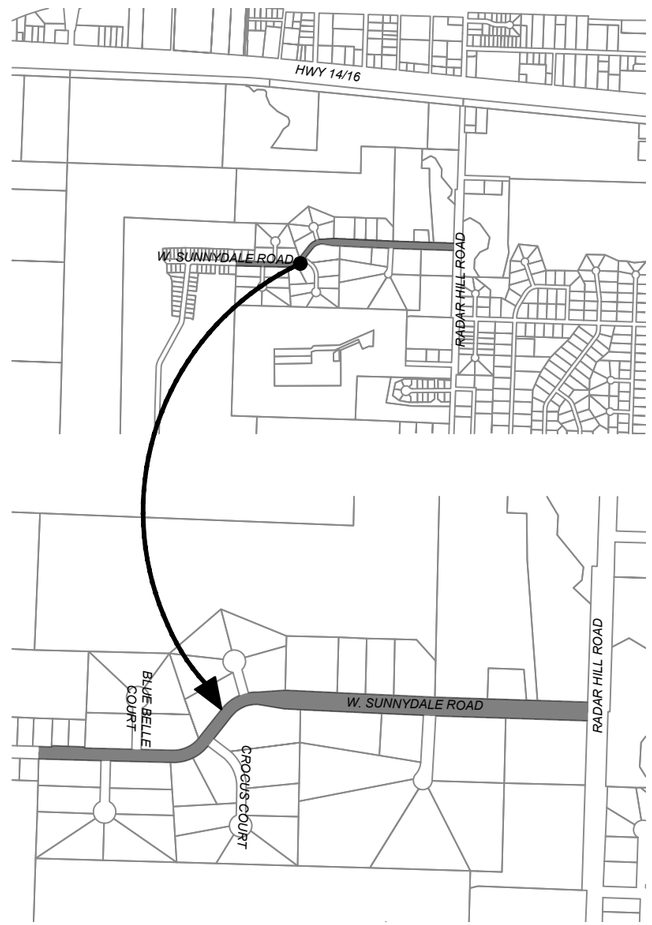
WEST SUNNYDALE ROAD RECONSTRUCTION
STREET AND UTILITIES IMPROVEMENTS
BOX ELDER, SOUTH DAKOTA
TDG PROJECT NO. 25-020
BOX ELDER PROJECT NO. 24002

ONE CALL
BEFORE DIGGING
1-800-781-7474

SOUTH DAKOTA



BOX ELDER, SOUTH DAKOTA



PROJECT LOCATION MAP
NOT TO SCALE

INDEX OF SHEETS

PROJECT NAME:
WEST SUNNYDALE ROAD RECONSTRUCTION

CURRENT ADDRESS:
WEST SUNNYDALE ROAD

RIGHT-OF-WAY
WEST SUNNYDALE ROAD = VARIES

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

I, RYAN WRIGHT, CERTIFY THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF SOUTH DAKOTA.

ENGINEER: Ryan J. Wright DATE: 2025.05.16

PLANS FOR

Box Elder
Innovative Community - Opportunities for All

PLANS BY

TDG
Towey Design Group
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

CITY APPROVAL

SD DANR APPROVAL

CONSTRUCTION SERVICES

SHEET NAME:
TITLE

SHEET NO:
1

STANDARD SPECIFICATIONS

Standard Specifications for this project shall be the City of Box Elders Standard Construction Specifications and Details, 2024 Edition, hereinafter referred to as the Standard Specifications. The Standard Specifications can be viewed on their website at https://www.boxeldersd.us/departments/Engineering

WARRANTY PERIOD

The warranty period shall be two (2) years per the Standard Specifications. The warranty period for this project shall start when the project is complete and accepted and shall not be based on completion of different phases or completion dates.

PROJECT SEQUENCING

The Contractor shall use the drawings for project sequencing guidance.

1. Implement approved traffic control plan and project sequencing in general conformance to of the plans.
2. Install erosion control BMPs prior to topsoil stripping or any excavation.
3. Installation of storm structures, storm culverts, reshaping of West Sunnydale Road, curb and gutter installation, permanent gravel placement for driveways and placement of asphalt surfacing.
4. The Contractor is responsible for scheduling of erosion control and sodding to comply with erosion control plan and storm water permit. The Contractor shall perform final restoration and erosion control installation immediately following final surfacing placement.
5. Complete site restoration, topsoil placement, sodding, and fertilizing.
6. Remove temporary erosion control devices upon request of Engineer.

The Contractor shall develop a construction schedule and sequence to meet the general intent. Contractor shall refer to the traffic control plan for general phasing requirements.

Scheduling of erosion control, sodding, and surfacing placement shall be scheduled in conjunction with the work to avoid erosion of the work area

CONSTRUCTION SCHEDULE

The construction schedule shall be prepared using industry standard project management software. The schedule shall show the work in a horizontal bar chart or other graphic format indicating times (in days or by dates) for starting and completing various stages of work. The construction schedule shall include sufficient detail to track all major work items, sequencing of work, final surface restoration, significant milestones, etc. The schedule shall be submitted in paper form.

The Contractor shall update the construction schedule at the request of the Engineer, if, in the Engineer's opinion, it no longer represents the actual progression of work. The Contractor shall also submit an updated construction schedule in the event the Contractor's planning for the work is revised.

PRECONSTRUCTION MEETING AND COORDINATION MEETINGS

A preconstruction meeting will be conducted in accordance with the Standard Specifications. The Contractor will be required to attend this and other periodic meetings with City personnel and affected utilities owners for the purpose of scheduling and coordination during the course of construction. The Contractor shall also be required to coordinate with the City of Box Elder water department for tying into the existing mains and for any temporary shut off services and utility maintenance department for sanitary sewer service line taps. The Engineer will establish frequency, time, and location of the periodic meetings.

EROSION, SEDIMENT, AND WATER POLLUTION CONTROL

A state permit is required for this project. The Contractor is responsible for filing the Notice of Intent (NOI) with the South Dakota Department of Agriculture and Natural Resources (SDDANR) to obtain coverage under the surface water discharge general permit for storm water discharges associated with construction activities. The Contractor is responsible for submitting the Contractor authorization form in order to be responsible for the day-to-day erosion and sediment control and implementation of the Storm Water Pollution Prevention Plan (SWPPP).

PROJECT COORDINATION

Contractor is responsible for coordinating work with all adjacent property owners that may be temporarily impacted by construction of this project.

SURVEY

The survey was done by All Aspects Inc. Land Surveying and was provided to Towey Design Group from Hermanson Egge Engineering. The existing manholes were not surveyed and are based on as-built drawings from Prairie Oaks Subdivision – Sanitary Sewer Main dated February 25th, 2004.

LICENSE

The related work includes the installation of water mains, sanitary sewer mains, and associated work. Contractor must hold current water and sewer installer's license with the City of Box Elder to perform the work. The licensee shall perform the work. A copy of the license shall be submitted to the Engineer prior to work commencement.

PERMITS

The Contractor shall be responsible for obtaining all necessary permits for this project.

PERMIT	NOT REQUIRED	BY CITY	BY CONTRACTOR	NOTES
City Floodplain Development Permit	X			
SDDANR NOI Permit			X	
SDDANR SWPPP			X	
SDDANR Permit for Temporary Discharge			X	If needed
Railroad Permit	X			
Pennington County Permits	X			
Other			X	

Copies of all permits shall be provided to the Engineer prior to beginning the Work.

INCIDENTAL WORK

Incidental work shall include all miscellaneous items not included in the regular items covered by unit prices listed in the proposal and shown on the drawings, but which must be performed in order to properly complete the work.

The items and work listed below are to be included in the incidental work item, but the list does not limit the scope to only those items. The Contractor shall include those items that may be specific to his construction procedures.

1)	Dust Control
2)	Obtain Permits as Needed
3)	Maintaining Temporary Surfacing
4)	Exploratory Excavation
5)	Waste Disposal
6)	Drainage Fabric
7)	Protect Utilities from Movement during Excavation
8)	Project coordination, scheduling, meetings, resident notification, public service announcements etc.
9)	Record Drawings
10)	Contractor Provided Water
11)	Testing of the Sanitary Sewer Main

Incidental work shall be paid for under the lump sum bid for "**Incidental Work**

SUBMITTALS

Submittals shall be made in accordance with the Standard Specifications at least seven (7) working days before their need for approval. Submittals will be accepted only from the Prime Contractor. Any work done prior to approval shall be at the Contractor's own expense.

The log of construction submittals shall include but is not limited to the table below:

1)	Construction Schedule
2)	Traffic Control Plan
3)	Key Personnel List
4)	Water / Sewer Contractor's list
5)	Subcontractor and Supplier List
6)	Labor and Equipment Rate Schedule
7)	SDDANR Stormwater Permit
8)	Erosion and Sediment Control Supervisor
9)	Any other necessary permits
10)	Project Information Sign
11)	Erosion Control Devices
12)	Silt Fence
13)	Straw Wattles
14)	Sanitary Sewer Manholes and Appurtenances
15)	Asphalt Mix Design
16)	Aggragate Base Course
17)	Concrete Mix Design
18)	CMP Storm Pipe
19)	CMP Storm Fittings
20)	Pipe Bedding Material
21)	Controlled Low Strength Material Mix Design
22)	Nyloplast Drainage Structure
23)	Gravel Surfacing, Permanent
24)	Fencing Materials
25)	Gate Materials
26)	Seed
27)	Fertilizer
28)	Mulch
29)	Record Drawings

DEWATERING PERMITS

Dewatering activities shall be conducted in accordance with the Standard Specifications, and in accordance with the following additional requirements.

Dewatering activities shall be conducted in compliance with the "General Permit to Discharge Under the Surface Water Discharge System for Temporary Discharge Activities in South Dakota", SDDANR Permit NO. SDG 070000. A copy of the permit is available through SDDANR. The Contractor is required to furnish the "Request for Authorization" to DANR required under the permit and for each schedule, obtain DANR authorization, and furnish a separate copy of authorization to the respective owner at the preconstruction conference.

The Contractor is responsible for performing self-monitoring activities including sampling, testing and reporting as may be determined to be required under the authorization to discharge. Payment for obtaining the necessary authorization to discharge, and for all compliance activities and obligations by the Contractor shall be absorbed into the item to which it relates. No additional payment will be made.

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder – Innovative Community · Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: **GENERAL NOTES 1 OF 3**
SHEET NO: **2**

UTILITY COMPANY NOTIFICATION

The Contractor shall utilize the South Dakota one call notification process to provide advance notice of at least 48 hours, excluding weekends and holidays, to inform all South Dakota underground facility operators of intended excavation. The Contractor shall contact all utility companies before work has commenced.

South Dakota 811 (One call)

1-800-781-7474 or 811

If utility locations are sufficiently identified within the time frame required any excavator damaging or injuring the underground facilities is strictly liable for damages to the utility.

If in the course of excavation, the excavator is unable to locate the underground facility or discovers that the operator of the underground facility has incorrectly located the underground facility, he shall promptly notify the utility operator, or, if the utility operator is unknown, the one-call notification center. The excavator shall also notify the Engineer.

CONSTRUCTION LIMITS

In general, the construction limits for the project shall be defined as follows:

Property lines, right-of-way lines, existing utility easement lines, and temporary construction easement lines shall be the construction limits unless indicated otherwise on the drawings or further defined herein.

Construction activities shall be restricted to the construction limits unless prior approval is received from the Engineer. The Contractor shall not operate or place equipment, materials, or stockpiles on private property without the property owner's written consent. The Contractor shall furnish a copy of owner's written consent to the Engineer.

Temporary construction easements are to be utilized only when work is being completed for that specific portion of the project. The temporary easements shall not be utilized for the storage of materials or equipment until adjacent work within a permanent easement or public ROW is under construction.

Use of City lands for staging areas, material storage, sedimentation ponds, dewatering, and/or topsoil stockpiling shall only be with prior approval from the Engineer. Any damages and restoration outside the construction limits shall be at the Contractor's expense

STAGING AREAS

A recommended staging area has not been identified in these plans. If the Contractor wishes to stage materials in locations outside the work limits. The Contractor is responsible for obtaining written permission from the owner of the proposed location and the Engineer. Copies of any written permission shall be delivered to the Engineer.

STOCKPILED MATERIALS

The following items are eligible for stockpile payment. All other items will not be considered. Payment for stockpiled materials shall be in accordance with the Standard Specifications.

- Storm pipe, fittings, and structures

EXISTING UTILITIES

Location of existing utilities shown on these drawings are approximate and were taken from available records. Prior to excavation, the Contractor shall field verify exact location of all utilities whether or not shown on these drawings. Contractor shall protect all utilities during construction. Excavators shall maintain a minimum horizontal clearance of eighteen inches between a marked underground facility and the cutting edge of any mechanical equipment. If excavation is required within eighteen inches, horizontally, the excavator shall expose the facility with hand tools or approved noninvasive methods and shall protect and support the facility prior to further excavation with mechanical equipment.

Unless explicitly otherwise noted, any disturbance or replacement of existing utilities shall be incidental to the project. If required, the Contractor shall coordinate relocation of utility with the utility owner. All utilities are to be adjusted and/or relocated by the respective utility companies unless other provisions are explicitly called for within these drawings.

PROTECTION OF EXISTING FEATURES

Existing features, including trees, landscaping, pavements, structures, etc. not called out for removals; or remove and reset; shall be protected by the Contractor.

EXISTING UTILITY CROSSINGS

Refer to specifications for crossing of existing storm sewers, sanitary sewers, water mains, and water main lowerings. At all locations where the proposed utility improvement crosses or is adjacent to existing storm sewers, sanitary sewers or water mains, the Contractor shall be responsible for safeguarding the existing utilities to ensure that they are not disturbed during the work. Temporary structural support for the utilities may be required. No separate payment shall be made for crossed utility protection. Any repair work necessary to a crossed utility resulting from the Contractor's activity shall be at the Contractor's expense.

MATERIAL TICKET SUBMITTALS AND STOCKPILES

The Contractor shall submit all tickets for measurement and payment in accordance with Standard Specifications. The Contractor shall clearly identify materials for various products used on the project, such as: bedding, gravel surfacing, etc. No hand-written tickets shall be allowed.

WASTE DISPOSAL

The Contractor will be responsible for all waste disposal on the project. The Contractor shall furnish the disposal site for this work and the location must be approved by the Engineer. No waste disposal is allowed within right of way or easements. No payment will be made for waste disposal.

If contaminated material is encountered on the project the Contractor shall immediately notify the Engineer.

All material generated by this project must be disposed of in accordance with the SDDANR solid waste regulations. Depending on what material is generated and whether it is contaminated or uncontaminated will determine which permitted facility can accept it. Permitted facilities include construction and demolition debris sites, restricted use sites, and regional landfills. Contact SD DANR Waste Management Program at 605-773-3153 to identify locally permitted disposal sites for various categories of contaminated and uncontaminated materials.

RECORD DOCUMENTS

Record Drawings: Contractor shall maintain a clean, undamaged set of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Record drawings may also be tracked by means of a digital platform such as Procore.

CONTRACTOR PROVIDED WATER

There will be no separate payment for water. The Contractor shall be responsible for providing water for compaction of earthen and granular materials used for, but not limited to, grading, subgrade preparation, and trench backfill. Water needed for sod and seed irrigation, street cleaning, and other miscellaneous items shall also be provided by the Contractor at no cost to the City. The costs for purchasing, loading, transporting and applying/incorporating water shall be incidental to the various items where water is required.

GRADING OPERATIONS

This section applies to all proposed grading shown on the plans.

The excavation and embankment shall be in accordance with the Standard Specifications. The Contractor shall apply moisture, if necessary, to obtain the required moisture and density requirements. No payment shall be made for water for compaction on the project.

The Contractor shall construct all proposed grading to the elevations shown on the plans using an acceptable Contractor furnished material or onsite materials. Contractor furnished borrow site must be approved by the Engineer. The topsoil shall be placed uniformly at the completion of the grading work.

For earthwork quantity calculation purposes topsoil is considered to be placed after final excavation and embankment grades shown on plans have been achieved. Over excavation or under embankment where necessary to match final topsoil placement with finished concrete or asphalt surfaces will be considered incidental work and no separate measurement or payment will be made.

BASE COURSE SCARIFICATION

Existing base course varies from 2 to 8.5 inches thick along West Sunnydale Road and can be scarified and recompacted to be used as subgrade material under the asphalt pavement. Areas where the Contractor shall perform all work necessary, with a disc, tiller, blade or excavator to loosen and manipulate the roadbed over its full width. The aggregate surface should be compacted to at lease 95% of the maximum dry density determined by ASTM D698 (Standard Proctor). Payment for Subgrade Scarification shall be incidental to Unclassified Excavation.

EXPLORATORY EXCAVATION

The Contractor shall provide exploratory excavation as necessary for the completion of the work under this contract. No separate payment will be made for exploratory excavation.

EXCAVATION, UNCLASSIFIED

Excavation of material required to achieve the proper subgrade elevation for the new road section shall be considered unclassified excavation.

Payment for all work associated with unclassified excavation shall be as outlined in the Standard Specifications and shall be paid for under the unit price bid for "Excavation, Unclassified".

TRENCH EXCAVATION AND BACKFILL

The Contractor shall be responsible for maintaining a safe excavation complying with applicable state and federal regulations. All trench backfill shall be moisture conditioned to within -1% to +3% of optimum moisture content. Trench backfill material shall be compacted to a minimum of 95% of the maximum proctor density as determined by the AASHTO T-180, modified proctor test.

No gypsum larger than one (1) inch in nominal size shall be placed in the backfill. The Contractor shall screen all gypsum fragments greater than one (1) inch in nominal size from the backfill material prior to placement.

REMOVAL QUANTITIES

Estimated removal and abandonment quantities are provided in the plans. Quantities provided have been calculated based on the measurements of the removal area. Station and offsets are provided for general project location only. The Contractor shall field verify removal quantities if they believe the information provided in the plans is in error. If an error is found, the Engineer shall be immediately notified.

Removal of driveway and/or alley gravel surfacing shall be considered incidental to the contract bid price for “Unclassified Excavation” and no separate payment will be made for removal of gravel surfacing.

Plans quantity will be the basis for payment for removal items unless changes are directed by the Engineer during construction. If changes are directed, the actual quantities removed will be measured by the Engineer and will be paid for at the unit prices under the respective remove bid items.

RIGHT-OF-WAY REMOVALS

Landscaping, and other associated items located within the Right-of-Way to be removed during construction shall be removed and salvaged to the landowner or as identified on the removal sheets. It is the Contractor’s responsibility to contact and coordinate with the landowner the location of where these items are to be placed.

REMOVE FENCE

The Contractor shall remove and salvage of fence at locations called out in the plans. Any labor, material, or equipment necessary to remove the entire fence, including, but not limited to the gates, barbed wire, and posts shall be paid for per linear foot per the bid item “Remove and Salvage Chain Link Fence” No separate payment will be made for gate removal.

INSTALL OF EXISTING FENCE

The Contractor shall install the existing chain link fence at locations called out in the plans. Fencing and gates shall be installed according to City of Box Elder Details. Any labor, material, or equipment necessary to construct right-of-way fencing and gates shall be paid for per linear foot per the bid item “Reinstall Chain Link Fence”.

TDG

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605.600.3758

LOGO:

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REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
GENERAL NOTES 2 OF 3

SHEET NO:
3

SANITARY SEWER MANHOLES

Manhole details are shown on the drawings. Manholes shall be provided with a maximum of 8 inches of concrete adjusting rings. Manhole barrel sections shall be O-ring gasket joints. All manholes shall be installed with bolt down rims and lids. Bolt down rims shall be installed in accordance with manufacturers' recommendations. Frame anchor bolts shall extend through the adjusting rings into the cone section of the manhole.

All labor and materials necessary to install and attach frame anchor bolts is considered incidental and shall be included in the bid item "standard manhole (appropriate size)" and paid for at the contract unit price per each.

STORM SEWER PIPE CONNECTIONS

A concrete collar shall be required when a normal male/female joint cannot be provided in a pipe segment. The concrete collar shall consist of a minimum 2' wide by 6" thick M6 concrete collar around the outside of the connection. The concrete collar shall be reinforced with 6" x 6", W2.9 / W2.9 wire mesh. All costs for constructing the concrete collar including materials and labor shall be paid under the contract unit price per each for "Connect to Existing Storm".

STORM SEWER INSPECTION

Storm sewers less than 48-inches in diameter shall be video inspected in accordance with the Standard Specifications. Copies of the video will be provided to the Engineer prior to the completion of the project.

All labor and materials necessary for video inspecting the new sanitary sewer main shall be included in the bid item "Storm Sewer Inspection" and paid for at the contract unit price per linear foot (LF).

FLEXAMAT STANDARD

Flexamat Standard shall be installed at the various locations provided in the plans. Flexamat Standard will be paid for at the contract unit price per square yard of Flexamat. The cost of Flexamat Standard shall include all incidentals necessary to haul, excavate, and place. High Strength Viaxial Greogrid, 5-Pick Leno Weave, and Curlex II Wood Excelsior as shown in their Flexamat Standard Specifications shall be installed and be incidental to the cost of installing Flexamat.

PERMANENT GRAVEL SURFACING

Gravel surfacing shall conform with the Standard Specifications. Gravel surfacing can be either Aggregate Base Course, or Limestone Ledge Rock Base Course and shall meet the gradation requirements provided in Table 1 in Section 882 of the SDDOT Standard Specifications.

Estimated quantities were based upon an assumed in place density of 150 LB/CU FT. Contractor shall not furnish base course prior to Engineer's subgrade approval.

TOPSOIL

The Contractor shall salvage and place topsoil in all areas indicated in the plans to receive seed. The estimated amount of topsoil to cover the areas designated to receive seed, to a minimum depth of 6 inches, is given in the estimate of quantities assuming no shrinkage.

Any areas outside the work limits, disturbed by the Contractor, shall be restored to a like condition by the Contractor at no expense to the City.

Payment for Contractor salvaged and placed topsoil will be at the contract unit price per cubic yard for "Topsoil, Salvage & Place." Plans quantity will be the basis of payment unless changes are ordered by the Engineer.

The Contractor will be required to pay for meter fees and installation onto a fire hydrant if the water is purchased from the City of Box Elder. Contact the Water Office at (605) 923-1404 to arrange for meter hook-ups to be added to fire hydrants and to obtain the current rate that will be charged.

PERMANENT SEEDING, FERTILIZING AND MULCHING

All disturbed areas that will not be paved, graveled, or sodded shall be permanently seeded, fertilized, and fiber mulched according to the Standard Specifications. Seed shall be placed by drilling methods on all areas.

Seed mix shall be the road ditch mix per the Standard Specifications.

STOCKPILE SITE

Prior to stockpiling materials, topsoil will be salvaged from and stockpiled. Topsoil will be considered to consist of the upper 6" of natural soil which normally supports vegetation.

Payment for stockpile site preparation will be incidental to the various contract items.

RESTORATION OF THE STOCKPILE SITE

The Contractor will scarify, replace and blade smooth the upper 6" of topsoil in the stockpile site upon completion of the project.

Payment for restoration of the stockpile site will be incidental to the project.

CONSTRUCTION STAKING

TDG will provide construction staking for the project, paid for by the City. Construction staking will be per Section 01.71.23 of the Standard Specifications.

Sanitary Sewer Main	
	Raise or Lower Manhole Rims
Pipe Culverts	
	Offset centerline stakes (maximum every 100 feet)
	Flared end sections with offset staking
Roadway	
	Centerline stakes at (maximum every 100 feet)
	Centerline stakes at PC's and PT's
	Catch slopes in major cut or fill areas
	Curb and gutter

A minimum of three (3) working days' notice shall be given prior to needing staking. The City shall provide initial staking only, any additional staking if in the opinion of the Engineer as a result of contractor operations, shall be the responsibility of the Contractor.

TDG

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SOUTH DAKOTA
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REVISIONS:

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DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
GENERAL NOTES 3 OF 3

SHEET NO:
4

EXISTING

- BORE HOLE
- TRANSFORMEER
- ELECTRIC / COMM BOX
- FIRE HYDRANT
- GATE VALVE
- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- SIGN
- STREET LIGHT
- TYPE B
- TYPE E
- TYPE S
- TREE
- GUY

- ASPHALT
- BUILDING
- CENTERLINE
- COMMUNICATION LINE
- CONCRETE
- CURB & GUTTER
- GAS LINE
- EDGE OF GRAVEL
- FENCE - BARB
- FENCE - CHAINLINK
- FENCE - WOOD
- MAJOR CONTOUR
- MINOR CONTOUR
- OVERHEAD POWER LINE
- POWER CONDUIT
- PROPERTY LINE
- RIGHT OF WAY LINE
- RIPRAP
- SANITARY SEWER MAIN
- SANITARY SEWER SERVICE
- SECTION LINE
- SIDEWALK
- STORM SEWER
- WATER MAIN
- WATER SERVICE

PROPOSED

- BEND
- BORE HOLE
- CAP
- CROSS
- DEFLECTION COUPLING
- FIRE HYDRANT
- GATE VALVE
- LEFT TURN LANE
- POST INDICATOR VALVE
- REDUCER
- RIGHT TURN LANE
- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- SIGN
- STREET LIGHT
- TEE
- TYPE B
- TYPE E
- TYPE S

- ASPHALT
- COMMUNICATION LINE
- CONCRETE
- CURB & GUTTER
- DEMOLITION
- DIRECTION OF FLOW
- DRAINAGE LINE
- EXCAVATION LIMITS
- EXISTING PROPERTY LINE
- EXISTING SANITARY SEWER MAIN
- EXISTING WATER MAIN
- FOUNDATION DRAIN
- GAS LINE
- GRAVEL FILTER SOCKS
- MAJOR CONTOUR
- MINOR CONTOUR
- PAVEMENT MARKING
- PERIMETER PROTECTION
- POWER CONDUIT
- PROPERTY LINE
- ROOF DRAIN
- RIGHT OF WAY LINE
- RIPRAP
- SANITARY SEWER MAIN
- SANITARY SEWER SERVICE
- SECTION LINE
- SETBACK LINE
- SIDEWALK
- SILT FENCE
- STORM SEWER
- STRAW WATTLE
- TOP SOIL BERM
- WATER MAIN
- WATER SERVICE

FLARED END SECTIONS STATION OFFSET LOCATIONS

RCP FLARED END SECTION DIMENSIONS		
INNER PIPE DIA.	LENGTH A	LENGTH B
12"	6'-0"	2'-0"
18"	6'-0"	3'-0"
24"	6'-0"	4'-0"
30"	6'-0"	5'-0"
36"	6'-0"	6'-0"
42"	8'-0"	6'-6"
48"	8'-0"	7'-0"
54"	8'-0"	7'-6"
60"	8'-0"	8'-0"

MINOR VARIATIONS OF DETAIL AND DIMENSIONS WILL BE ACCEPTED TO PERMIT THE USE OF A MANUFACTURER'S STANDARD METHOD OF FABRICATION.

CMP FLARED END SECTION DIMENSIONS		
INNER PIPE DIA.	LENGTH A	LENGTH B
18"	2'-7"	3'-0"
24"	3'-5"	4'-0"
30"	4'-3"	5'-0"
36"	5'-0"	6'-0"
42"	5'-9"	7'-0"
48"	6'-6"	7'-6"
54"	7'-3"	9'-6"

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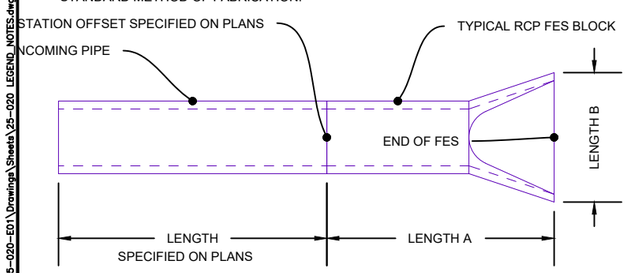
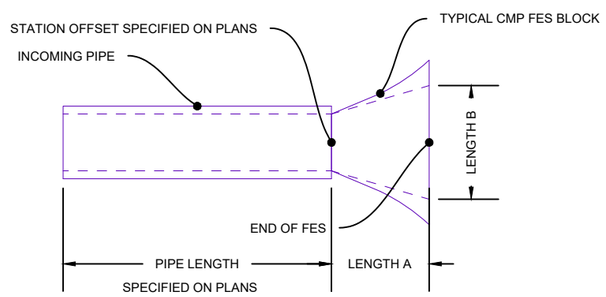


CONTRACTOR TO VERIFY STAKING LOCATION WITH SURVEYOR PRIOR TO CONSTRUCTION



CONTRACTOR TO VERIFY STAKING LOCATION WITH SURVEYOR PRIOR TO CONSTRUCTION

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: **LEGEND**
SHEET NO: **5**

Line Item	Description of Item	Qty.	Unit
General			
100	Mobilization	1.0	LS
101	Incidental Work	1.0	LS
102	Material Testing	1.0	LS
103	Traffic Control	1.0	LS
104	Construction Staking	1.0	LS
Removals			
200	Remove Existing Pipe Culvert	995.0	LF
201	Remove and Salvage Chain Link Fence and Gate	149.0	LF
202	Remove Existing Sidewalk	665.0	SF
Excavation			
300	Unclassified Excavation	440.0	CY
301	Topsoil: Salvage and Stockpile	3062.0	CY
302	Topsoil: Place	2220.0	CY
303	Imported Material	8690.0	CY
304	Seeding, Fertilizing, & Mulching	3.0	AC
Water			
400	Raise Existing Water Valve	5.0	EA
Sanitary Sewer			
500	Lower Existing Sanitary Manhole	2.0	EA
501	Raise Existing Sanitary Manhole	10.0	EA
Storm Sewer			
600	12" Corrugated Metal Pipe	130.0	LF
601	18" Corrugated Metal Pipe	568.0	LF
602	24" Corrugated Metal Arch Pipe	57.0	LF
603	24" Corrugated Metal Pipe	150.0	LF
604	18" Flared End Section	10.0	EA
605	24" Arch Flared End Section	2.0	EA
606	24" Flared End Section	6.0	EA
607	2' x 3' Type B Inlet	3.0	EA
608	12" Nyloplast Drainage Structure	1.0	EA
609	18" Nyloplast Drainage Structure	2.0	EA
610	30" Nyloplast Drainage Structure	1.0	EA
611	Connect to Existing	1.0	EA
Street			
700	Aggragate Base Course	1245.0	T
701	Asphalt Paving	2690.0	T
702	Curb and Gutter	917.0	LF
703	Asphalt Walking Path	385.0	T
704	Concrete Driveway	148.0	SY
705	Gravel Surfacing, Permanent	1497.0	SY
706	Asphalt Driveway	37.0	T

Line Item	Description of Item	Qty.	Unit
Erosion Control			
800	Inlet Protection	6.0	EA
801	Vehicle Tracking Control	1.0	EA
802	Concrete Wash Out Area	1.0	EA
803	Perimeter Protection	3235.0	LF
804	Straw Wattle	1400.0	LF
805	Flexamat Standard	1521.0	SF
Miscellaneous			
900	Type 1 Tree	12.0	EA
901	Type 2 Tree	7.0	EA
902	Type 3 Tree	8.0	EA
903	Type 4 Tree	11.0	EA
904	Type 5 Tree	8.0	EA
905	Reinstall Chain Link Fence and Gate	149.0	LF
906	Reset Property Pins	10.0	EA
907	Geogrid	171.0	SF

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LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

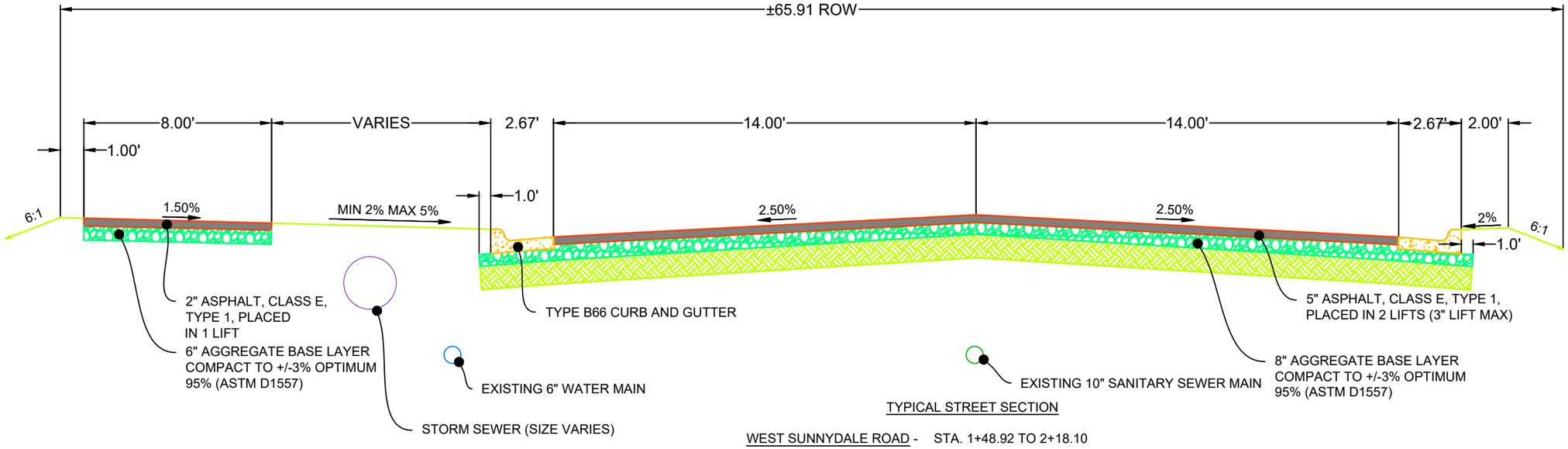
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
ESTIMATE OF QUANTITIES

SHEET NO:
6

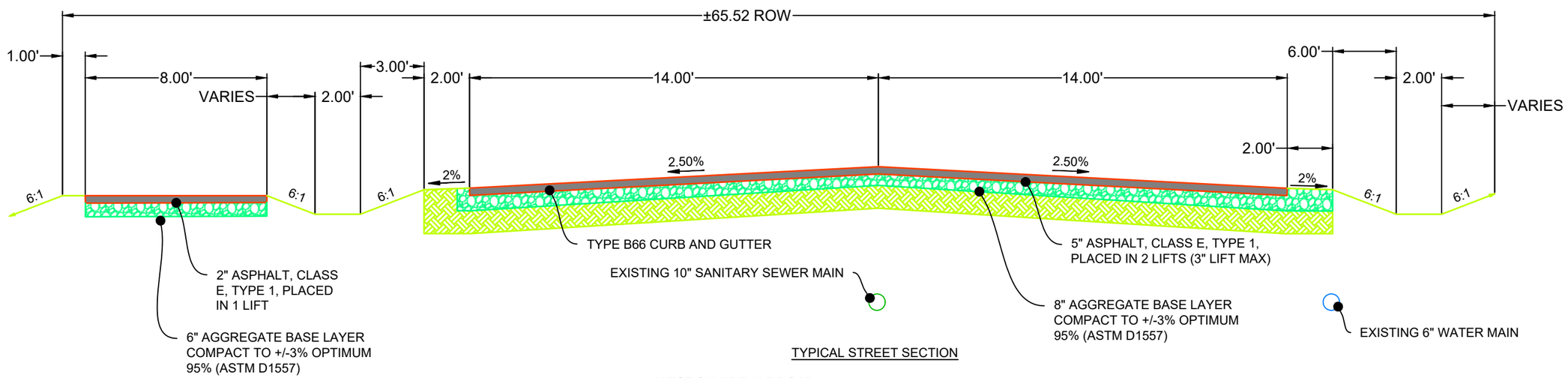
TYPICAL SECTION NOTE

THE EXISTING BASE COURSE ALONG WEST SUNNYDALE ROAD VARIES FROM 2 INCHES TO 8.25 INCHES PER SUBSURFACE BORING LOG WITHIN THE GEOTECHNICAL REPORT. THE MINIMUM AGGREGATE BASE COURSE UNDER THE PROPOSED PAVEMENT IS 8 INCHES PER RECOMMEND PAVEMENT SECTION THICKNESS (INCHES) WITHIN THE GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR STRIPPING 2 INCHES OF BASE COURSE AND COMPACT IT TO AET'S RECOMMENDATIONS. THERE MAY BE SOME AREAS WHERE THE CONTRACTOR WILL CUT MORE THAN THE MINIMUM 2 INCHES OR FILL THE EXISTING AGGREGATE SURFACE. THE CONTRACTOR IS RESPONSIBLE TO FOLLOW AET'S RECOMMENDATIONS WHEN REMOVING OR PLACING NEW AGGRAGETE OVER THE EXISTING AGGREGATE SURFACING.



TYPICAL STREET SECTION

WEST SUNNYDALE ROAD - STA. 1+48.92 TO 2+18.10



TYPICAL STREET SECTION

WEST SUNNYDALE ROAD - STA 2+18.10 TO STA 2+60.42
STA 3+70.84 TO STA 4+60.00

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WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

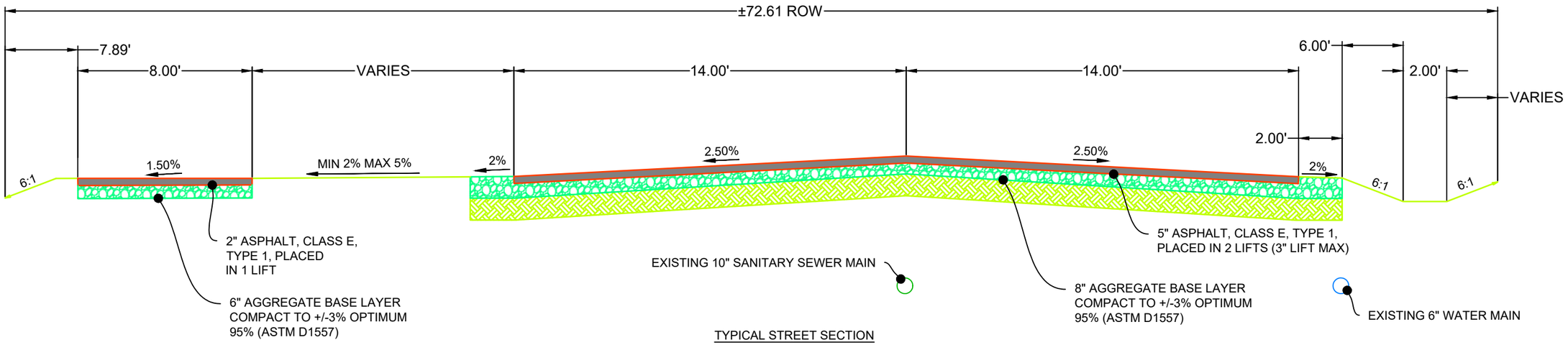
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: **TYPICAL SECTION 1 OF 3**

SHEET NO: **7**

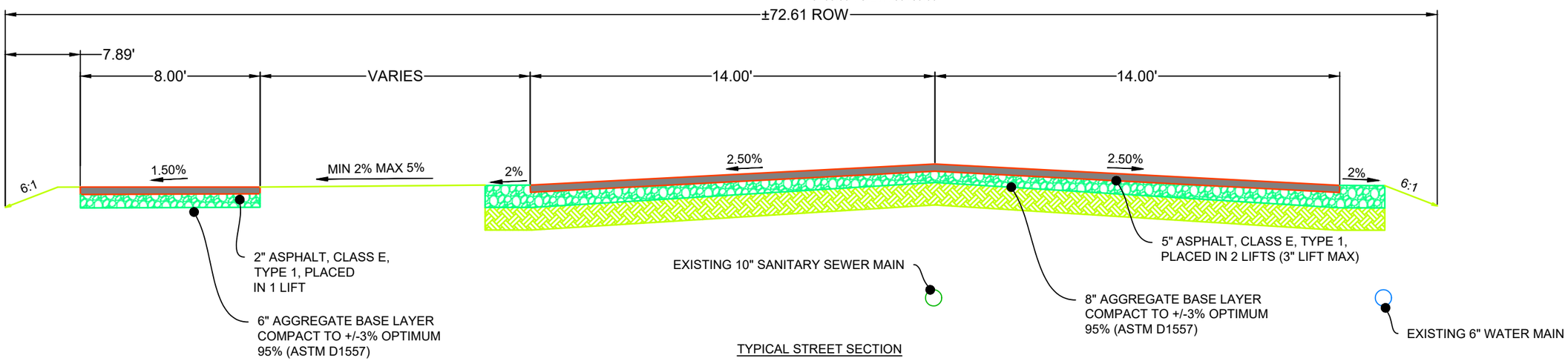
TYPICAL SECTION NOTE

THE EXISTING BASE COURSE ALONG WEST SUNNYDALE ROAD VARIES FROM 2 INCHES TO 8.25 INCHES PER SUBSURFACE BORING LOG WITHIN THE GEOTECHNICAL REPORT. THE MINIMUM AGGREGATE BASE COURSE UNDER THE PROPOSED PAVEMENT IS 8 INCHES PER RECOMMEND PAVEMENT SECTION THICKNESS (INCHES) WITHIN THE GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR STRIPPING 2 INCHES OF BASE COURSE AND COMPACT IT TO AET'S RECOMMENDATIONS. THERE MAY BE SOME AREAS WHERE THE CONTRACTOR WILL CUT MORE THAN THE MINIMUM 2 INCHES OR FILL THE EXISTING AGGREGATE SURFACE. THE CONTRACTOR IS RESPONSIBLE TO FOLLOW AET'S RECOMMENDATIONS WHEN REMOVING OR PLACING NEW AGGRAGETE OVER THE EXISTING AGGREGATE SURFACING.



TYPICAL STREET SECTION

WEST SUNNYDALE ROAD -
STA 2+60.42 TO STA 3+70.84
STA 9+39.68 TO STA 10+35.05
STA 11+40.00 TO STA 14+50.00
STA 20+05.25 TO STA 23+05.10
STA 27+21.00 TO STA 28+85.00
STA 29+65.00 TO STA 30+80.00



TYPICAL STREET SECTION

WEST SUNNYDALE ROAD -
STA 7+20.00 TO STA 9+39.68
STA 17+88.60 TO STA 20+05.25
STA 23+77.11 TO STA 24+20.00
STA 30+80.00 TO STA 31+97.37

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REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

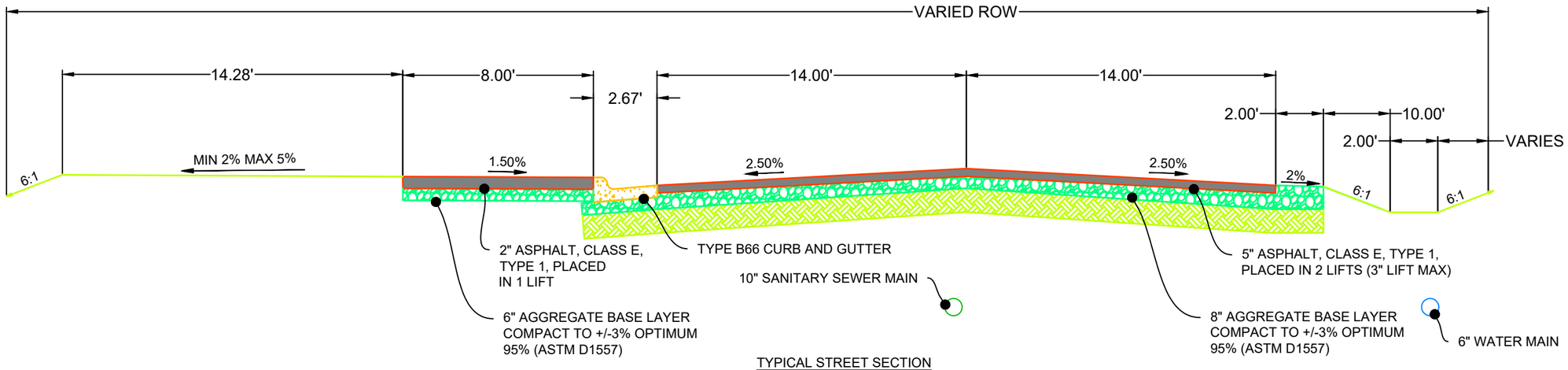
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: **TYPICAL SECTION 2 OF 3**

SHEET NO: **8**

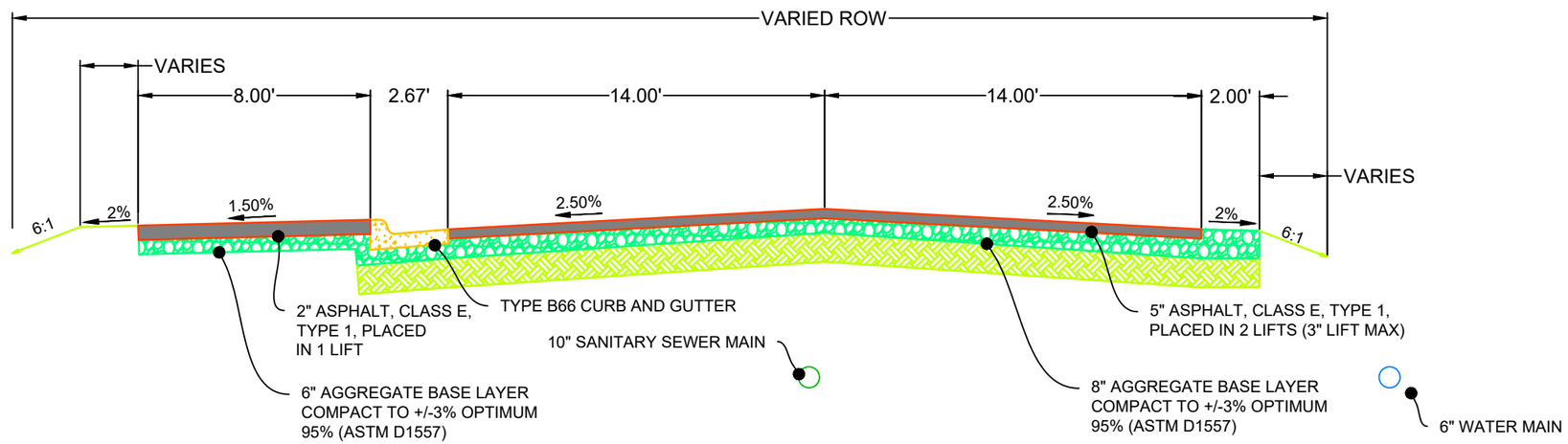
TYPICAL SECTION NOTE

THE EXISTING BASE COURSE ALONG WEST SUNNYDALE ROAD VARIES FROM 2 INCHES TO 8.25 INCHES PER SUBSURFACE BORING LOG WITHIN THE GEOTECHNICAL REPORT. THE MINIMUM AGGREGATE BASE COURSE UNDER THE PROPOSED PAVEMENT IS 8 INCHES PER RECOMMEND PAVEMENT SECTION THICKNESS (INCHES) WITHIN THE GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR STRIPPING 2 INCHES OF BASE COURSE AND COMPACT IT TO AET'S RECOMMENDATIONS. THERE MAY BE SOME AREAS WHERE THE CONTRACTOR WILL CUT MORE THAN THE MINIMUM 2 INCHES OR FILL THE EXISTING AGGREGATE SURFACE. THE CONTRACTOR IS RESPONSIBLE TO FOLLOW AET'S RECOMMENDATIONS WHEN REMOVING OR PLACING NEW AGGRAGETE OVER THE EXISTING AGGREGATE SURFACING.



TYPICAL STREET SECTION

WEST SUNNYDALE ROAD - STA. 11+00.00 TO 11+40.00



TYPICAL STREET SECTION

WEST SUNNYDALE ROAD - STA 14+93.61 TO 17+88.60
STA 22+52.26 TO 26+55.63

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REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: **TYPICAL SECTION 3 OF 3**

SHEET NO: **9**

PP — PERIMETER PROTECTION

STRAW WATTLE

TOP SOIL BERM

GRAVEL FILTER SOCK

SILT FENCE

VTC — VEHICLE TRAFFIC CONTROL

CWA — CONCRETE WASHOUT AREA

INLET PROTECTION

FLEXAMAT EROSION CONTROL

APPROXIMATE LIMITS OF SEEDING

(1) 13,320 SY OF SEEDING RESTORATION

N

50' 25' 0 50' 100'

SCALE: 1"= 100'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 EROSION CONTROL.dwg 5/19/2025 12:24pm

TDG

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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

SURVEYED BY: ALL ASPECTS INC.

SURVEY DATE:

SHEET NAME: **EROSION CONTROL PLAN**

SHEET NO: **10**

Owner Representative:

Company: City of Box Elder
Contact: **Scott Lange**
Address: **206 Frontage Road**
Address: **Box Elder, SD 57719**
Email: scott.lange@boxelder.us
Phone: 605.923.1404

Contractor:

Company: **TBD**
Contact:
Address:
Address:
Email:
Phone:

Design Engineer:

Company: **Towey Design Group, Inc.**
Contact: **Ryan Wright**
Address: **147 Chisholm Drive**
Address **Box Elder, SD 57719**
Email: **ryan@toweydesigngroup.com**
Phone: **605.600.3758**

Project Description:

This project is the reconstruction of West Sunnydale Road. The project includes the construction of a 28-foot-wide asphalt pavements section, shoulders, curb and gutter, storm culverts, raising/lowering existing manholes, raising existing water valves, street grading, ditch grading, and an 8-foot-wide asphalt walking path.

Existing Site Conditions:

The existing site generally consists of gravel roads, paved roads, gravel driveways, and grassed right-of-way ditches.

- Are wetlands an issue? **No**
- If wetlands are an issue, has a determination been made by the US Army Corps of Engineers? **No**
- Does the State Historical Preservation Office (SHPO) need to review these plans? **No**
- Does the SD Game, Fish, and Parks need to review these Plans? **No**
- Does the US Fish and Wildlife Service need to review these plans? **No**

Adjacent Areas:

West Sunnydale Road currently has residential homes on the north and south side of the existing street with a multiunit family home/apartments on the west end of West Sunnydale Road along Radar Hill Road.

Soils:

Underlying a layer of aggregate base course, sandy lean-to fat clay was encountered within the borings along with weathered shale that exceeds the bore logs. The sandy lean to fat clay is reddish-brown to brown that is firm to very stiff that has gravel present.

Area Disturbed:

The total surface area to be disturbed is approximately 3.0 acres.

Area for Stockpile and Storage:

Any excavated materials to be reused may be stockpiled within the project limits at a location chosen by the Contractor and approved by the Owner and Engineer. Excess excavated materials are to be hauled off site. Stockpiles of excavated materials shall be protected by a silt fence where the silt fence shall be placed at a minimum of 8' from the toe of the pile and seeded with a temporary cover crop.

Schedule:

The following is a proposed order of project sequencing. If the Contractor proposes to utilize a different sequencing, they shall submit that to the Engineer and Owner for approval.

- July of 2025 – Install erosion control components and perimeter protection. Commence construction, remove gravel surfacing, site grading and pave street.
- September of 2025 – Place topsoil, seed, fertilize, and mulch remaining disturbed areas.
- Erosion control measures installed within the project will remain in place and only be removed once the site has become stabilized.

Sediment Control Measures:

Silt fence, wattles, inlet protection, vehicle tracking control, temporary sediment trap, surface roughing, mulching, routine cleanup of adjacent streets.

Erosion and Sediment Control Sequencing:

The following erosion and sediment control sequencing shall be followed by the Owner /Contractor involved in this construction site activity. Changes in the project's construction plans and timelines may require this sequence to be changed. Any changes to this this erosion and sediment control plan (ESCP) must be approved by the Engineer prior to making modifications in the field.

Prior to grading operations:

- Owner shall review all erosion and sediment control measures in this ESCP.
- ESCP shall be approved and accepted by the City of Rapid City.
- Contractor shall obtain a grading/construction permit from the City of Rapid City.
- Contact information sign must be posted.
- All erosion and sediment control measures shall be installed as specified on the plans.

All erosion and sediment control practices shall be in accordance with the most current standards and details of the City of Rapid City Standard Construction Specifications. Any variation from the above referenced design standards shall not be allowed unless formally approved in advance from the Engineer and City of Rapid City.

During site grading phase

- Upon issuance of a grading permit, the Contractor may proceed with site grading in compliance with the grading plan and approved ESCP
- The installation of all sediment control facilities shall begin before major grading activities in accordance with the ESCP.
- During all phases of grading, the erosion and sediment control measures shall be maintained while in service.
- Additional ES&C measures may be needed to meet permit requirements.

Permanent Stabilization Measures:

All disturbed areas from construction operations that are not paved or graveled shall be seeded with a temporary cover crop, stabilized by other interim measures or install permanent seeding, fertilized and mulched.

Stormwater Management Considerations:

Stormwater will generally flow from the north/northwest to the south/southeast and will be routed to the existing detention pond within the subdivision.

Maintenance:

All paved streets adjacent to the site shall be cleaned at the end of each working day. All construction traffic leaving the site shall exit via the vehicle tracking control.

The Prime Contractor shall assure that qualified personnel inspect the site at least once every 7 calendar days and within 24 hours of the end of a storm that is one-half (0.5) inch or greater to confirm plan compliance. A report summarizing the areas inspected, name(s) and title(s) of personnel making the inspection, the date(s) of the inspection, major observations, and corrective actions taken shall be made and retained as part of the plan for at least three (3) years. Such reports shall identify any incidents of non-compliance. Where an inspection does not identify incidents of non-compliance, the report shall contain a certification that the site is in compliance with the plan and permit.

Soil Stabilization:

After construction begins, soil stabilization shall be applied within 14 days to all disturbed areas that may not be final grade but will remain dormant (undisturbed) for periods longer than an additional 21 calendar days. Within 14 days after final grade is reached on any portion of the site, permanent or temporary soil stabilization shall be applied to disturbed areas and soil stockpiles.

Maximum time limits of land exposures for selection of erosion controls:

Erosion Control Method	Maximum Allowable Period of Exposure (months)
Surface Roughening*	1
Mulching	12
Temporary Revegetation	12-24
Permanent Revegetation	24 or more
Soil Stockpile Revegetation	2
Early Application of Road Base	1

*The surface roughening erosion control may be extended to a maximum of three (3) months on a case basis if the City Inspector has determined that the site demonstrates the following:

- Appropriate soil conditions exist for the methods of control.
- Disturbed areas will be seeded and mulched within three (3) months.
- Seasonal planting limitations exist.
- Soil stabilization method has demonstrated its effectiveness.

Notice of Intent:

The Contractor will be required to submit the Notice of Intent (NOI) to SDDANR. The Contractor will submit copies of the approved permit to the Owner and Engineer. The City will also be responsible for submitting the Notice of Termination (NOT) once stabilization is complete.

Dewatering:

Dewatering operations are not expected, if needed, a general dewatering permit will be required from SD DANR.

Erosion and Sediment Control Measures

Perimeter Protection (PP):

Perimeter protection shall be installed at locations shown on the drawings or as directed by the Engineer, to retain sediment from being transported off the project site. Perimeter protection may be constructed with silt fence or sediment control wattles. Perimeter protection shall be inspected in accordance with the SWPPP.

Silt Fence (SF):

Silt fence (Low Flow: 20-70 gal/min/sf or High Flow 71-145 g/min/sf) shall be placed at the locations noted in the drawings and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction.

Mucking Silt Fence:

Mucking silt fence shall consist of removing muck trapped by the silt fence and spreading the material evenly over the adjacent area to conform to the existing grade. The Contractor shall remove muck when the surface of the muck is at approximately 1/3 the height of the silt fence.

TDG
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LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
EROSION CONTROL NOTES 1 OF 2

SHEET NO:
11

Sediment Control Wattles (SCW):

Sediment control wattles can be used for perimeter control, inlet protection, check dams, slope protection, etc. and shall be installed at locations as shown on the drawings and at locations determined by the Engineer during construction.

The Contractor shall provide certification that the sediment control wattles do not contain noxious weed seeds. For compost socks the contractor shall also provide certification that the compost used is free from noxious weed seeds.

The Contractor shall remove sediment trapped by the wattle when the surface of the sediment reaches one-half the height of the exposed wattle. Damaged areas should be repaired immediately until the vegetation is established and growing through the material.

Erosion Control Blanket (ECB):

Erosion control blanket shall be installed at locations as shown on the drawings and at locations determined by the Engineer during construction.

Erosion control blankets are placed into the following categories:

- Type 1 – used for temporary stabilization of slopes of less than 10H:1V, Not allowed in channel applications;
- Type 2 – used for temporary stabilization of slopes of 3H:1V or less, can be used in low gradient ditches and channels;
- Type 3 – used for temporary stabilization of slopes of 2H:1V or less, used in ditches and channels; and
- Type 4 – used for temporary stabilization of slopes of 1H:1V or less, used in ditches and channels.

Vehicle Tracking Control (VTC):

The Contractor shall install vehicle tracking control measures at locations as shown on the drawings.

The Contractor shall maintain the vehicle tracking control pads such that mud tracking and sediment flow will not enter the roadway or adjacent drainage areas. The vehicle tracking control pads shall be routinely inspected and the Contractor shall repair or replace material as deemed necessary by the Engineer.

Spill Prevention/Control Practices:

- 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 clean-up supplies.
- Appropriate clean-up materials and equipment will be maintained by the Contractor in the material storage area onsite. As appropriate, materials and equipment may include items such as: brooms, 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 any hazardous substances.
- After a spill, a report will be prepared describing the spill, what caused it, and the clean-up 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 clean-up coordinator. The Contractor is responsible for ensuring that the Site Superintendent has had appropriate training for hazardous materials handling, spill management, and clean-up.

Erosion and Sediment Control Plan Certification:

This erosion and sedimentation control narrative and attached erosion and sediment plan appears to fulfill the local technical criteria. I understand that additional erosion and sediment control measures may be needed if unforeseen erosion problems occur or if the submitted plan does not function as intended. The requirements of this plan shall run with the land and be the obligation of the owner until such time as the plan is properly completed, modified, or voided.

Owner Representative Date

Engineer Certification:

I hereby certify that these plans were prepared under my direct supervision and that I am a duly registered professional engineer under the laws of the State of South Dakota.

Ryan Wright, PE (SD#17533) Date

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

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REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

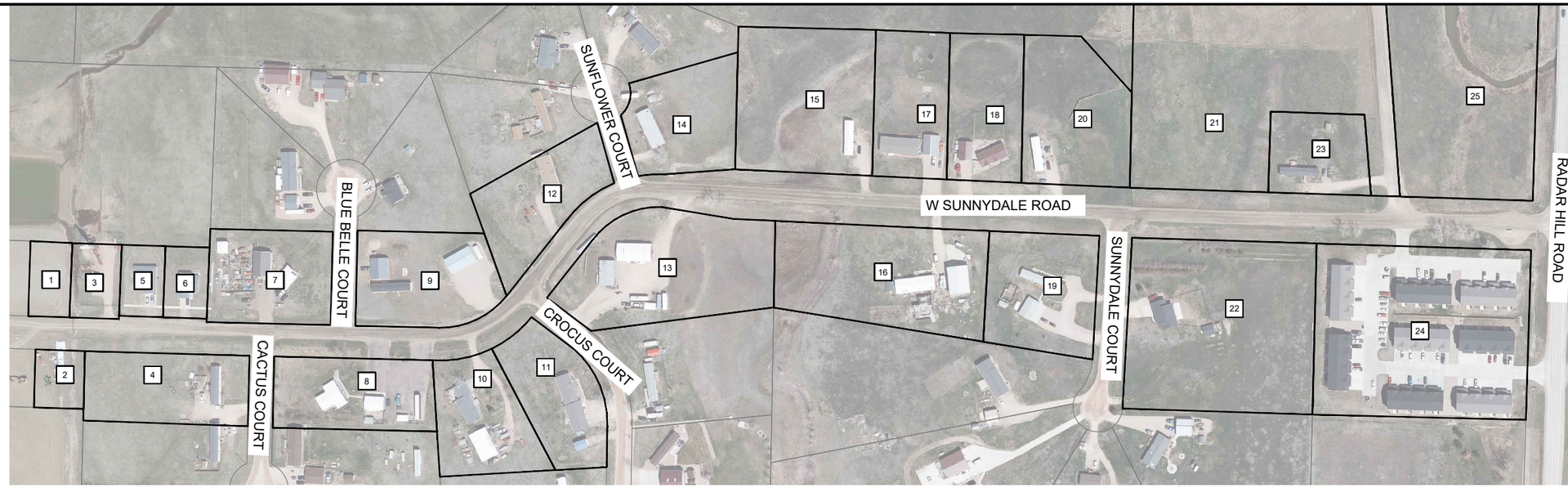
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
EROSION CONTROL NOTES 2 OF 2

SHEET NO:
12



PROPERTY NO.	OWNER	CURRENT PROPERTY/MAILING ADDRESS	FUTURE PROPERTY/MAILING ADDRESS	LEGAL DESCRIPTION	SUBDIVISION
1	UNIMAX LLC	331 NORTHERN LIGHTS BLVD E		LOT 3 BLOCK 1	ALPHA OMEGA SUBD
2	JOSEPH MULQUEEN	336 NORTHERN LIGHTS BLVD E		LOT 1 BLOCK 4	ALPHA OMEGA SUBD
3	CITY OF BOX ELDER	420 VILLA DR		LOT WELL NO. 6	PRAIRIE OAK SUBD
4	BERT FEINBERG	301 CACTUS CT		LOT 33	PRAIRIE OAK SUBD
5	CHARLES DODD	512 W SUNNYDALE RD		LOT 2 BLOCK 1	ALPHA OMEGA SUBD
6	DENNIS WEBB	508 W SUNNYDALE RD		LOT 1 BLOCK 1	ALPHA OMEGA SUBD
7	MARK THOMPSON	301 BLUE BELLE CT		LOT 25	PRAIRIE OAK SUBD
8	JERALD MAINE	607 W SUNNYDALE RD		LOT 26	PRAIRIE OAK SUBD
9	GLENN WOLDT	302 BLUE BELLE CT		LOT 21	PRAIRIE OAK SUBD
10	DAN SMITH	601 W SUNNYDALE RD		LOT 20	PRAIRIE OAK SUBD
11	GARY WALTON	301 CROCUS CT		LOT 19	PRAIRIE OAK SUBD
12	GERALD ROMEO	301 SUNFLOWER CT		LOT 11	PRAIRIE OAK SUBD
13	RORY SIMONSON	302 CROCUS CT		LOT 12	PRAIRIE OAK SUBD
14	MICHAEL WHITING/DEGEN-WHITING	302 SUNFLOWER CT		LOT 7	PRAIRIE OAK SUBD
15	GONZALEZ, LEONARD	325 W SUNNYDALE RD		LOT 1	DEJONG SUBD
16	ALETHA WHITETHORN	322 W SUNNYDALE RD		LOT 6B OF LOT 6	PRAIRIE OAK SUBD
17	KRYSTAL HAMMER	321 W SUNNYDALE RD		LOT 2	DEJONG SUBD
18	ALEC KREMER	317 W SUNNYDALE RD		LOT 3	DEJONG SUBD
19	DAVID TOTTON	301 SUNNYDALE CT		LOT 6A OF LOT 6	PRAIRIE OAK SUBD
20	GONZALEZ, LEONARD	313 W SUNNYDALE RD		LOT 4	DEJONG SUBD
21	HECTOR FRIAS	306 W SUNNYDALE RD		TRACT 1AR LOCATED IN SEC 24 AND SEC 25	DEJONG SUBD
22	TREY MCFARLAND	302 SUNNYDALE CT		LOT 1	PRAIRIE OAK SUBD
23	CHANTAL SWENBY/DOMINGUEZ-GARCIA	301 W SUNNYDALE RD		LOT 5	DEJONG SUBD
24	DAKOTAFOUR LLC	22727 RADAR HILL RD		THAT PT OF TRACT A-101 REFERRED TO AS THE SEWAGE LAGOON DESCRIBED BY METES AND BOUNDS PER DEED IN BOOK 107 PAGE 6326 LESS LOT H1 AND LESS ROW	TRACT A-101 SUBD
25	TB HOLDINGS LLC	W SUNNYDALE RD		3640 CAMBELL ST STE A	DEJONG SUBD

N

175' 0 175' 250'

SCALE: 1"= 250'

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

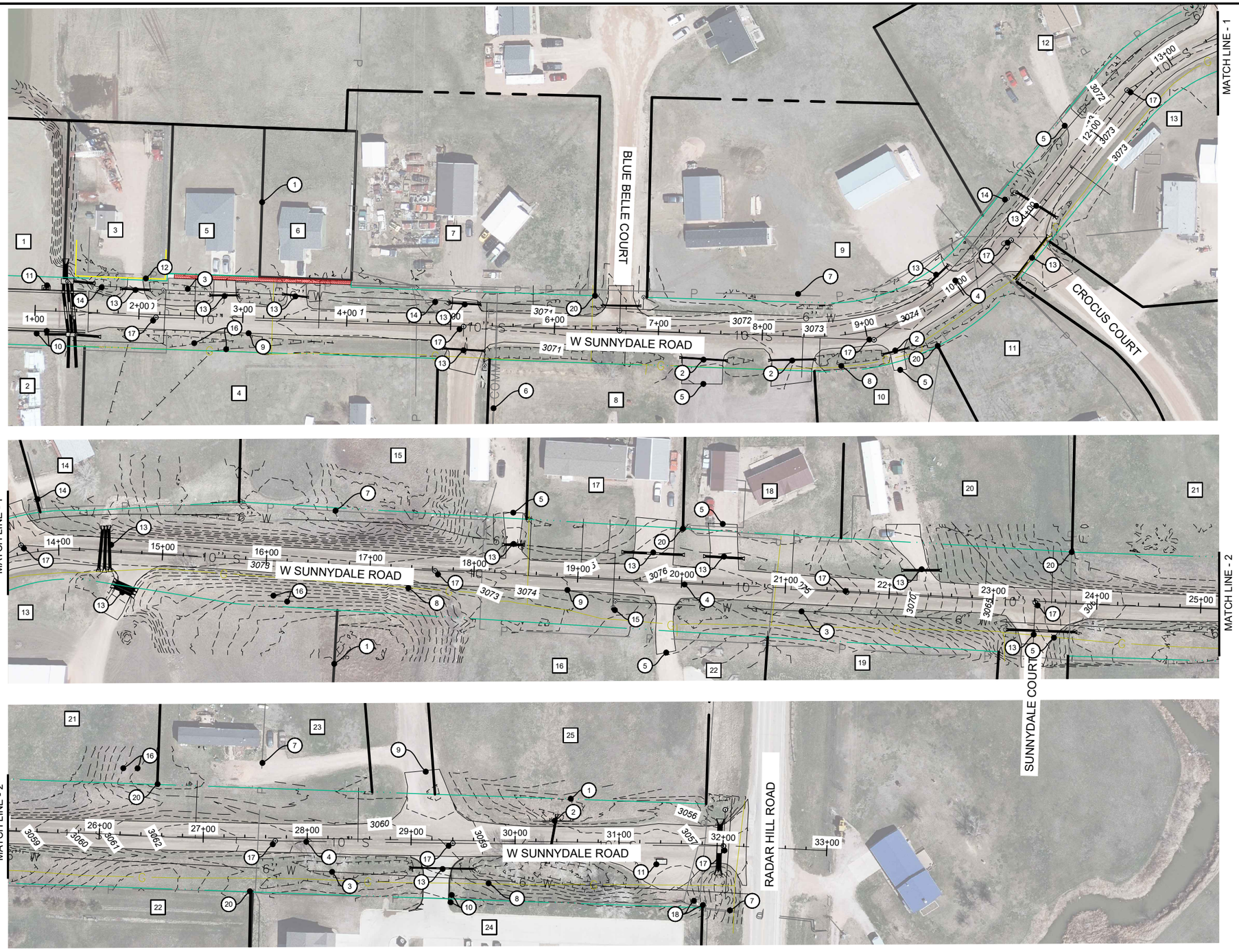
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
PROPERTY OWNERS

SHEET NO:
13



1. PROPERTY LINES
2. EXISTING STORM SEWER TO BE REMOVED
3. EXISTING 6" WATER MAIN
4. EXISTING 10" SANITARY SEWER MAIN
5. REMOVE GRAVEL DRIVEWAY
6. EXISTING COMMUNICATION LINES
7. EXISTING POWER
8. EXISTING GAS MAIN
9. EXISTING GRAVEL ROAD
10. EXISTING CURB AND GUTTER
11. EXISTING MAILBOX CLUSTER
12. REMOVE EXISTING FENCE LINE
13. REMOVE EXISTING STORM SEWER
14. EXISTING WATER VALVE
15. EXISTING FIRE HYDRANT
16. EXISTING 1' CONTOURS
17. EXISTING SANITARY SEWER MANHOLE TO BE ADJUSTED TO NEW FINISHED GRADE
18. EXISTING TRANSFORMER AND UTILITY BOXES
19. REMOVE EXISTING SIDEWALK
20. EXISTING PROPERTY CORNER

N

50' 25' 0 50' 100'

SCALE: 1"= 100'

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

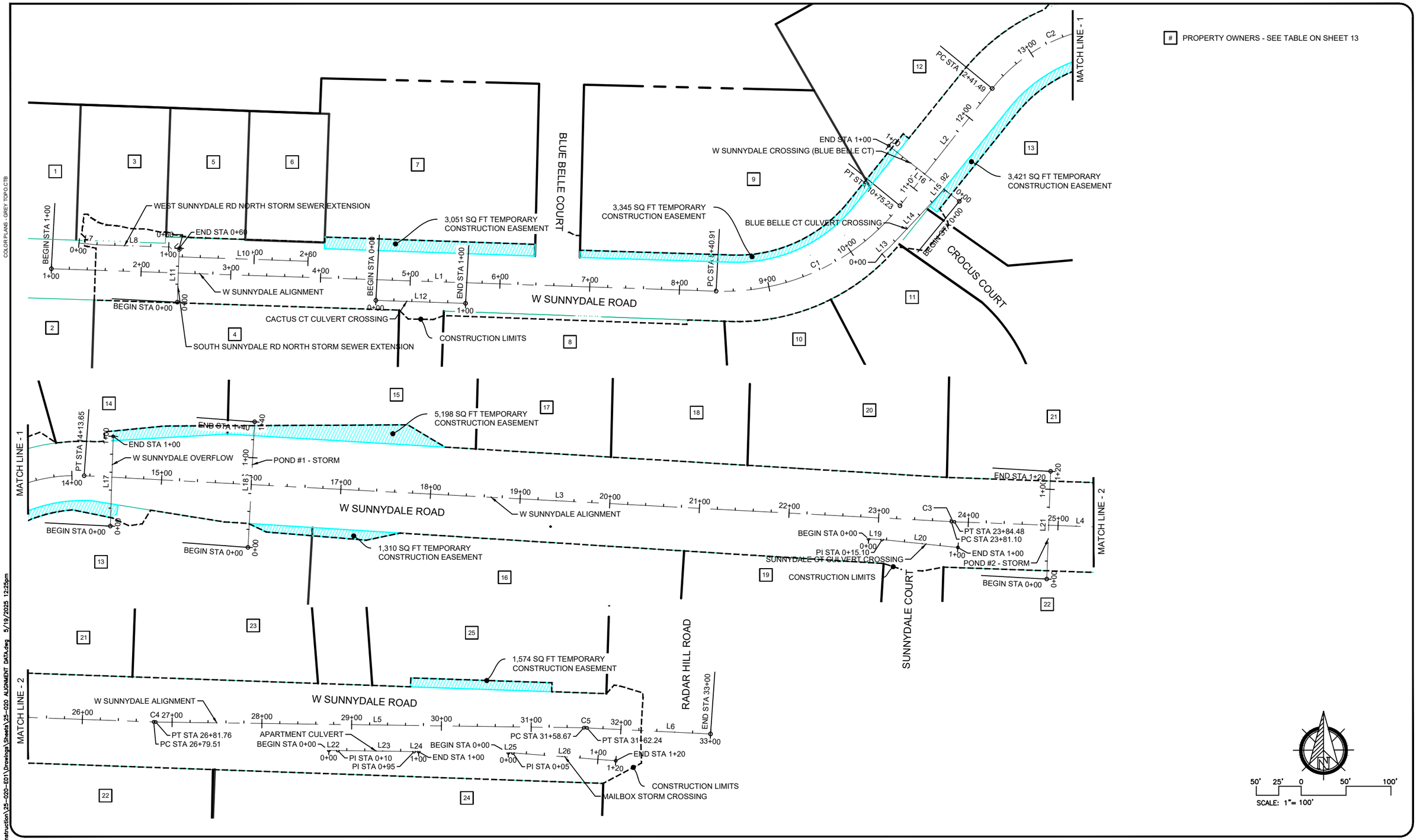
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020	
DESIGNED BY: RW	
DRAWN BY: NR	
SURVEYED BY: ALL ASPECTS INC.	
SURVEY DATE:	

SHEET NAME:
EXISTING CONDITIONS AND REMOVALS

SHEET NO:
14



COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 ALIGNMENT DATA.dwg 5/19/2025 12:25pm

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Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020	SHEET NAME: **ALIGNMENT AND EASEMENT DATA**
DESIGNED BY: RW	
DRAWN BY: NR	
SURVEYED BY: ALL ASPECTS INC.	SHEET NO: **15**
SURVEY DATE:	

W SUNNYDALE ALIGNMENT - ALIGNMENT												
NUMBER	START STATION	NORTHING	EASTING	BEARING	END STATION	END NORTHING	END EASTING	Δ	T	R	L	PI STATION
L1	1+00.00	658830.37	1241363.19	S88° 03' 57.93"E	8+40.91	658805.37	1242103.68				740.91	
C1		658801.10	1242230.17					053° 42' 12"	126.567	250.00	234.325	9+67.47
L2	10+75.23	658900.52	1242308.49	N38° 13' 49.66"E	12+41.49	659031.12	1242411.38				166.26	
C2		659104.41	1242469.12					054° 48' 01"	93.303	180.00	172.160	13+34.79
L3	14+13.65	659099.48	1242562.29	S86° 58' 09.76"E	23+81.10	659048.33	1243528.39				967.45	
C3		659048.24	1243530.08					000° 58' 04"	1.689	200.00	3.378	23+82.79
L4	23+84.48	659048.18	1243531.76	S87° 56' 13.64"E	26+79.51	659037.56	1243826.61				295.03	
C4		659037.52	1243827.73					001° 17' 18"	1.124	100.00	2.248	26+80.64
L5	26+81.76	659037.51	1243828.85	S89° 13' 31.14"E	31+58.67	659031.06	1244305.72				476.91	
C5		659031.04	1244307.50					002° 02' 37"	1.784	100.00	3.567	31+60.46
L6	31+62.24	659030.95	1244309.28	S87° 10' 54.24"E	33+00.00	659024.17	1244446.88				137.76	

WEST SUNNYDALE RD NORTH STORM SEWER EXTENSION - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L7	0+00.00	658858.98	1241394.00	21.10	0+21.10	658856.92	1241415.00	S84° 23' 40.09"E
L8	0+21.10	658856.92	1241415.00	79.98	1+01.09	658854.60	1241494.95	S88° 20' 11.78"E
L9	1+01.09	658854.60	1241494.95	15.08	1+16.17	658843.59	1241505.25	S43° 05' 20.92"E
L10	1+16.17	658843.59	1241505.25	143.83	2+60.00	658838.73	1241649.01	S88° 03' 57.93"E

SOUTH SUNNYDALE RD NORTH STORM SEWER EXTENSION - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L11	0+00.00	658793.12	1241503.55	60.00	0+60.00	658853.08	1241505.57	N01° 56' 02.07"E

CACTUS CT CULVERT CROSSING - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L12	0+00.00	658795.15	1241724.71	100.00	1+00.00	658791.78	1241824.65	S88° 03' 57.93"E

BLUE BELLE CT CULVERT CROSSING - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L13	0+00.00	658846.89	1242288.53	10.97	0+10.97	658854.15	1242296.76	N48° 35' 28.46"E
L14	0+10.97	658854.15	1242296.76	77.49	0+88.46	658910.42	1242350.03	N43° 25' 55.76"E
L15	0+88.46	658910.42	1242350.03	11.46	0+99.92	658919.08	1242357.53	N40° 51' 38.93"E

W SUNNYDALE CROSSING (BLUE BELLE CT) - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L16	0+00.00	658905.46	1242374.57	100.00	1+00.00	658967.34	1242296.01	N51° 46' 10.34"W

W SUNNYDALE OVERFLOW - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L17	0+00.00	659043.44	1242591.52	100.00	1+00.00	659143.39	1242594.64	N01° 47' 14.29"E

POND #1 - STORM - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L18	0+00.00	659019.71	1242744.82	140.00	1+40.00	659159.52	1242752.22	N03° 01' 50.24"E

SUNNYDALE CT CULVERT CROSSING - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L19	0+00.00	659029.18	1243436.14	15.10	0+15.10	659028.38	1243451.23	S86° 58' 09.76"E
L20	0+15.10	659028.38	1243451.23	84.90	1+00.00	659019.59	1243535.67	S84° 03' 11.72"E

POND #2 - STORM - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L21	0+00.00	658984.44	1243634.65	120.00	1+20.00	659104.36	1243638.96	N02° 03' 46.36"E

APARTMENT CULVERT - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L22	0+00.00	659005.90	1244021.68	10.00	0+10.00	659005.76	1244031.68	S89° 13' 31.12"E
L23	0+10.00	659005.76	1244031.68	85.00	0+95.00	659004.61	1244116.67	S89° 13' 31.12"E
L24	0+95.00	659004.61	1244116.67	5.00	1+00.00	659004.55	1244121.67	S89° 13' 31.12"E

MAILBOX STORM CROSSING - ALIGNMENT								
NUMBER	START STATION	NORTHING	EASTING	LENGTH	END STATION	END NORTHING	END EASTING	BEARING
L25	0+00.00	659003.19	1244221.66	5.00	0+05.00	659003.13	1244226.66	S89° 13' 31.12"E
L26	0+05.00	659003.13	1244226.66	115.00	1+20.00	658994.33	1244341.33	S85° 36' 51.50"E

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147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

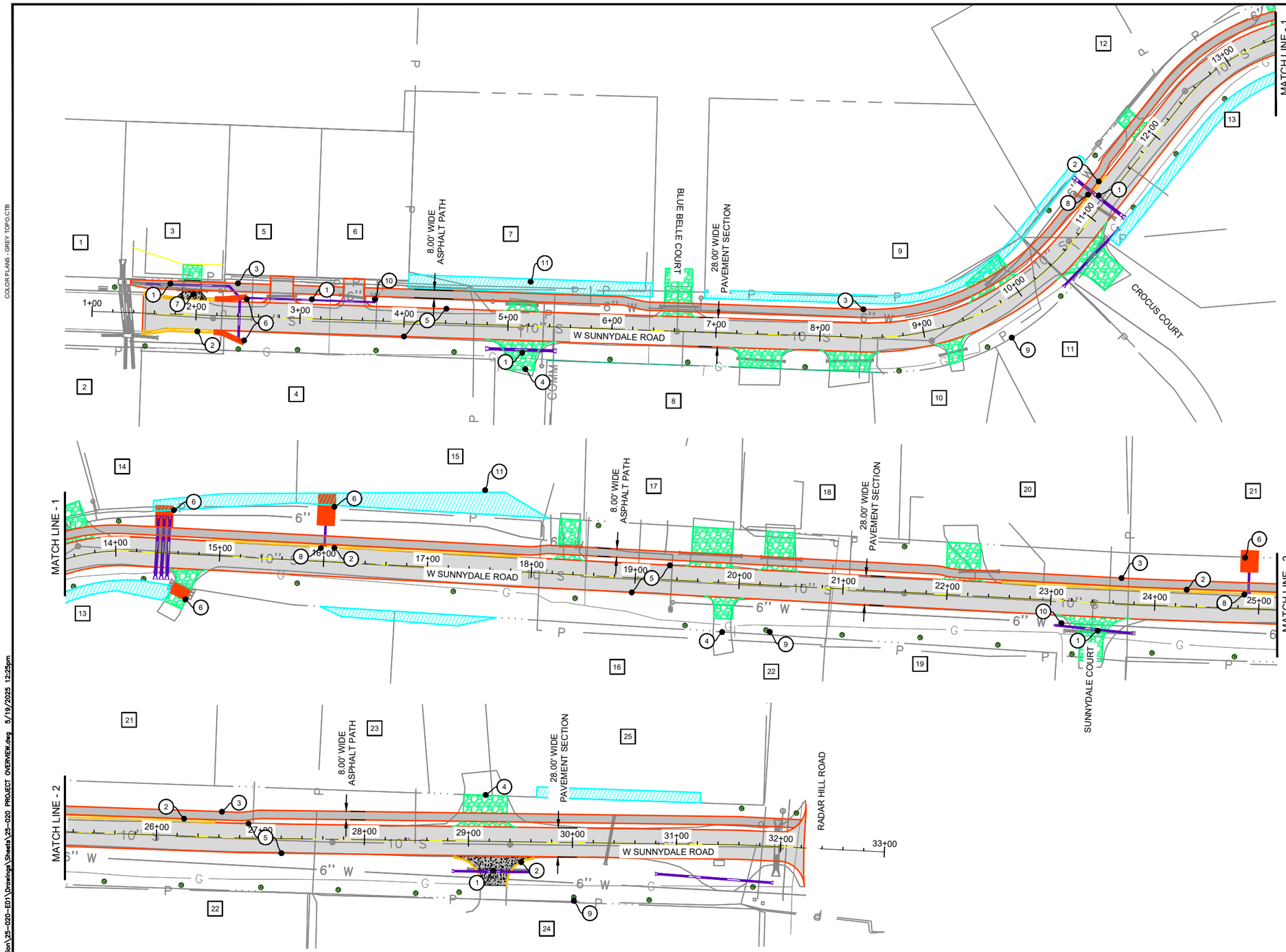
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
ALIGNMENT DATA

SHEET NO:
16



1. PROPOSED STORM SEWER
2. PROPOSED CURB AND GUTTER
3. PROPOSED 8' WIDE ASPHALT PATH
4. PROPOSED GRAVEL DRIVEWAY
5. PROPOSED 28' WIDE ASPHALT ROAD
6. PROPOSED FLEXAMAT EROSION CONTROL
7. PROPOSED CONCRETE DRIVEWAY
8. PROPOSED TYPE B 2X3 INLET
9. PROPOSED TREE
10. NYLOPLAST DRAINAGE STRUCTURE
11. TEMPORARY EASEMENT

PROPERTY OWNERS - SEE TABLE ON SHEET 13

50' 25' 0 50' 100'
SCALE: 1"= 100'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 PROJECT OVERVIEW.dwg 5/19/2025 12:25pm

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Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

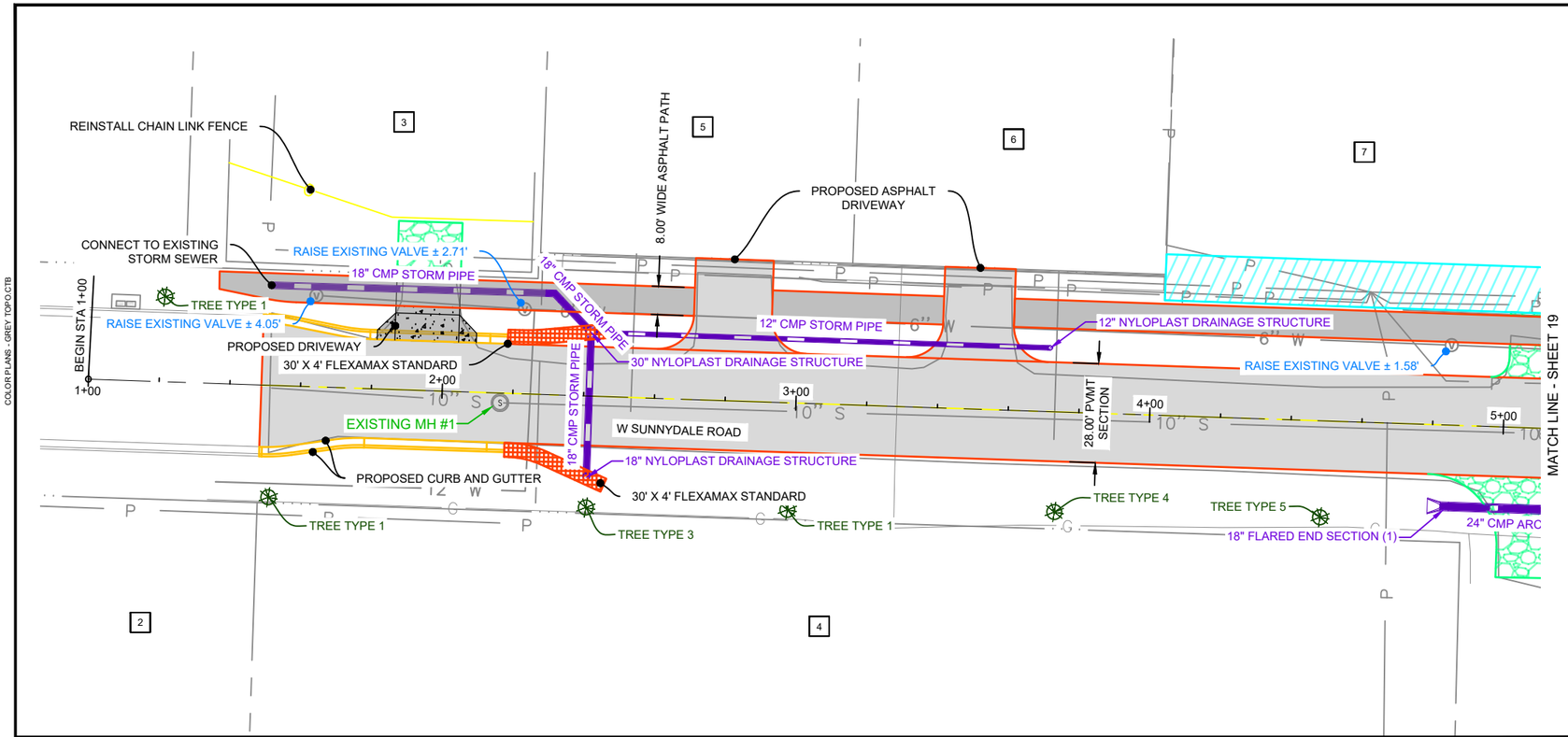
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

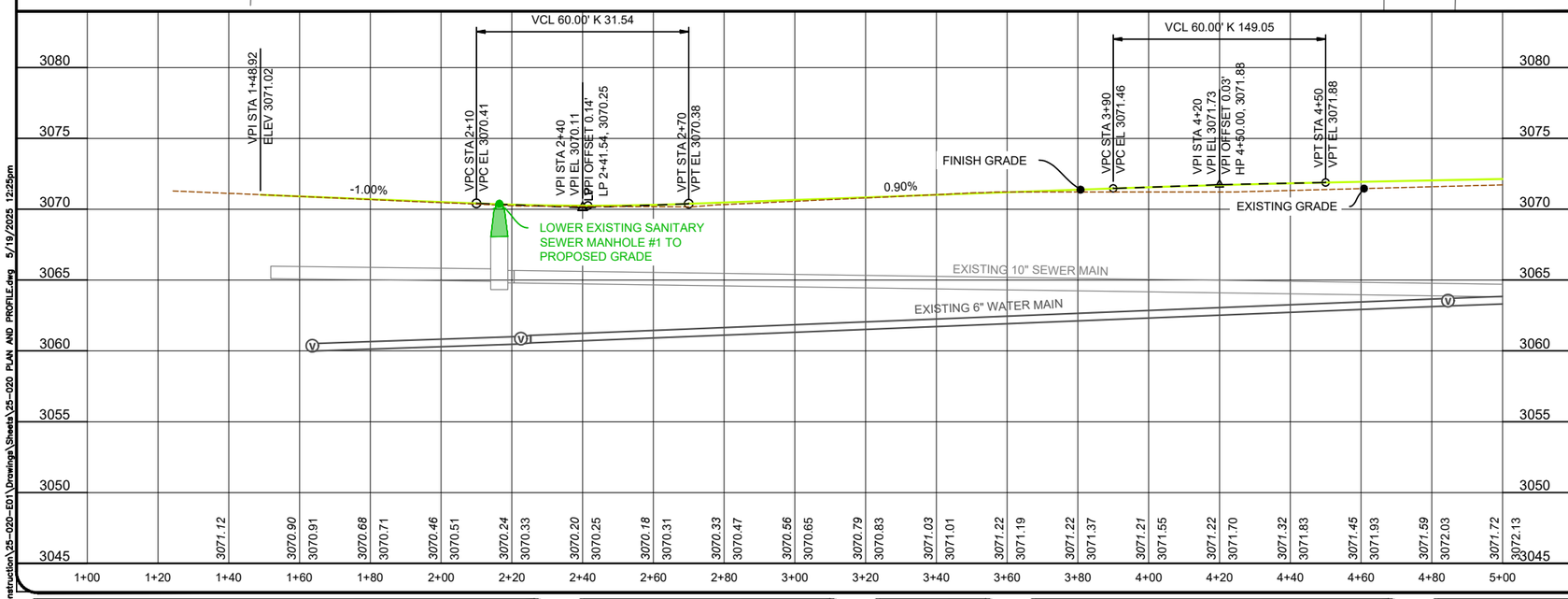
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

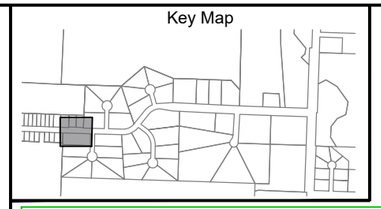
SHEET NAME: **PROJECT OVERVIEW**

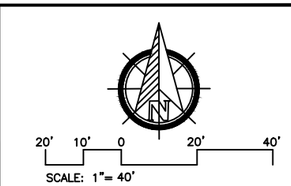
SHEET NO: **17**





Key Map





EXISTING SANITARY SEWER MANHOLE #1

(LOWER EXISTING MANHOLE RIM ~0.12')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO LOWER MANHOLE BY ~0.12' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE' FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE' TILIA AMERICANA 'REDMOND'	SKYLINE HONEY LOCUST SUNBURST HONEY LOCUST REDMOND AMERICAN LINDEN	3
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED' ULMUS AMERICANA 'LEWIS & CLARK' FRAXIMINUS MADSHURICA 'MANCANA'	AUTUMN BLAZE FREEMAN MAPLE PRAIRIE EXPEDITION ELM MANCANA MANCHURIAN ASH	0
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE' TILIA CORDATA X MONGOLICA 'HARVEST GOLD' QUERCUS X BIMUNDORUM 'MIDWEST'	GREENSPIRE LITTLELEAF LINDEN HARVEST GOLD LINDEN PRAIRIE STATURE OAK	1
TREE TYPE 4		
ACER NEGUNDO 'SENSATION' GLEDITSIA TRIACANTHOSE INERMIS 'HARVE' GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	SENSATION BOX ELDER NORTHERN ACCLAIM HONEY LOCUST IMPERIAL HONEY LOCUST	1
TREE TYPE 5		
CELTIS OCCIDENTALI GYMNOCCLADUS DIOICUS ULMUS AMERICANA 'PRINCETON'	HACKBERRY KENTUCKY COFFEETREE PRINCETON ELM	1

PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES

STATION	OFFSET	INV: ELEV	ITEM DESC
2+30.87	28.66'L	Pipe - (212): 3066.87' - In Pipe - (213): 3066.87' - Out	18" 45° BEND
2+41.54	23.00'R	Pipe - (215): 3067.12' - Out	18" NYLOPLAST DRAINAGE STRUCTURE
2+41.54	18.00'L	Pipe - (213): 3066.95' - In Pipe - (216): 3067.45' - Out Pipe - (215): 3066.93' - In	30" NYLOPLAST DRAINAGE STRUCTURE
3+71.35	18.00'L	Pipe - (216): 3068.39' - In	12" NYLOPLAST DRAINAGE STRUCTURE
4+85.21	23.00'R	Pipe - (197): 3070.49' - In	18" FLARED END SECTION (1)

PLANTING PLAN

STATION	OFFSET	ITEM DESC
1+51.91	32'R	TREE TYPE 1
2+41.68	31'R	TREE TYPE 3
2+98.60	30'R	TREE TYPE 1
3+73.99	28'R	TREE TYPE 4
4+49.05	27'R	TREE TYPE 5
1+20.92	24'L	TREE TYPE 1

SANITARY SEWER MAIN

STATION	OFFSET	ITEM DESC
2+16.44	2.73'R	EXISTING MH #1

WATER MAIN NOTES

STATION	OFFSET	T.O.P. ELEV	ITEM DESC
1+63.59	25.83'L		6" GATE VALVE
2+22.55	23.94'L	3061.00	6" GATE VALVE
4+84.60	22.63'L	3063.69	6" GATE VALVE

TDG

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LOGO: Box Elder - Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025-05-16

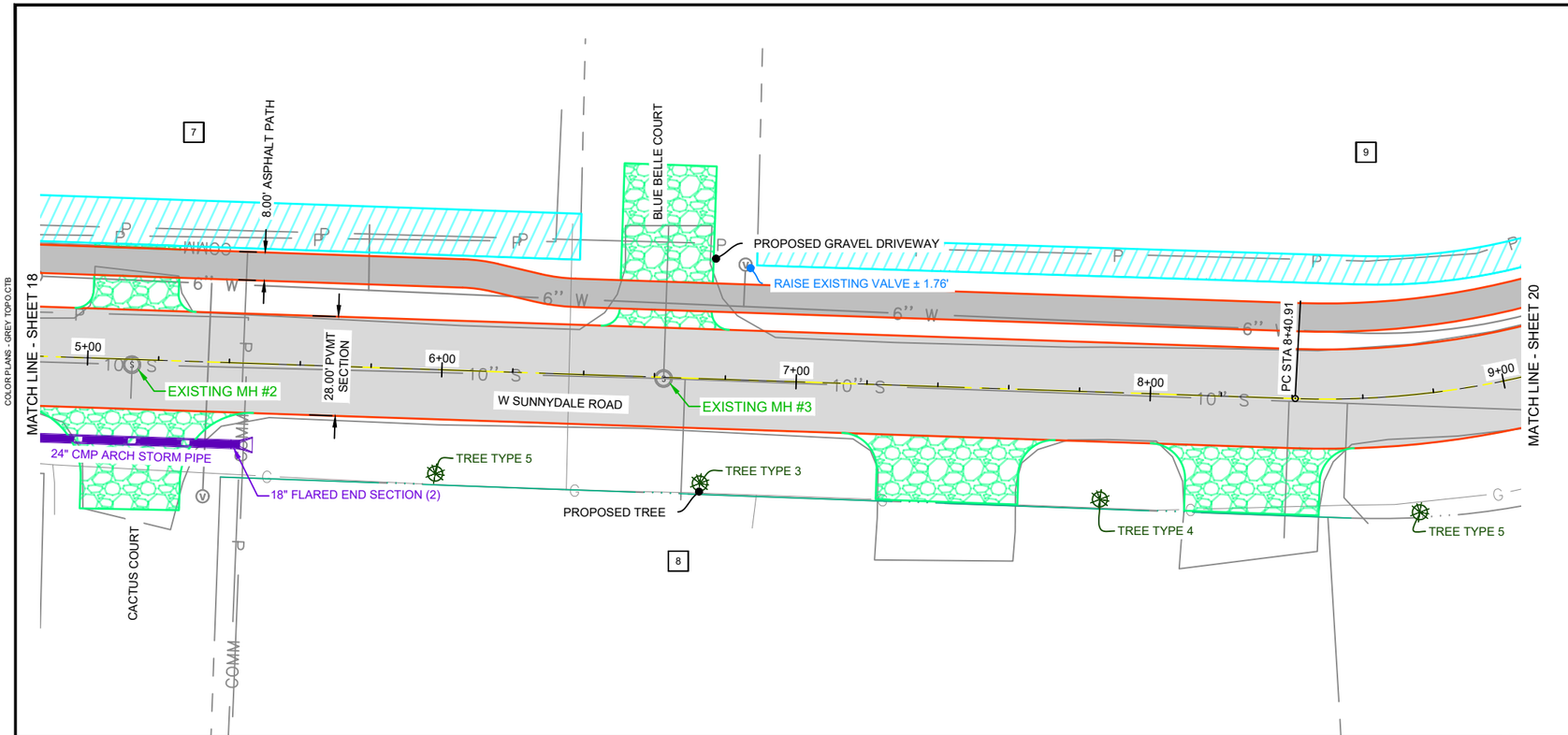
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

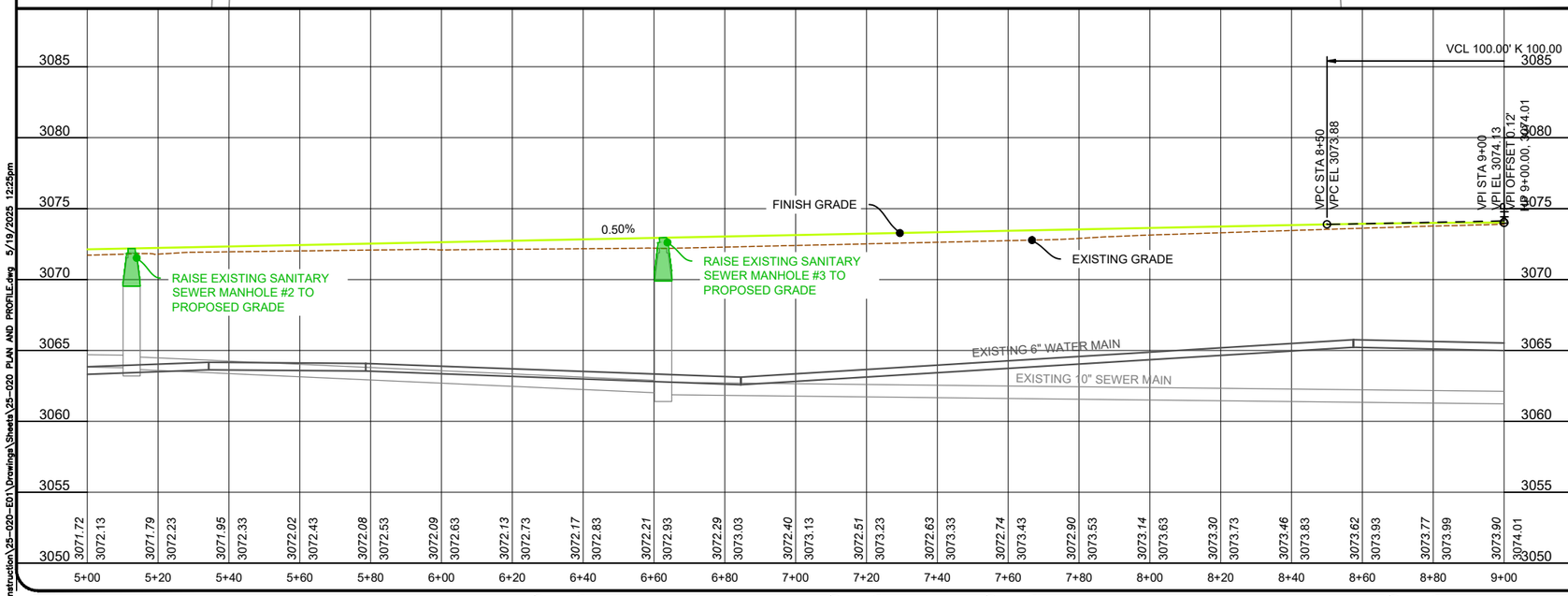
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

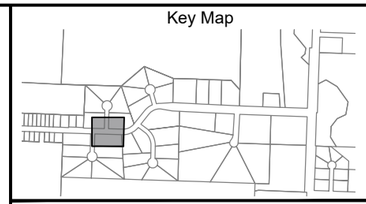
SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 1+00-5+00

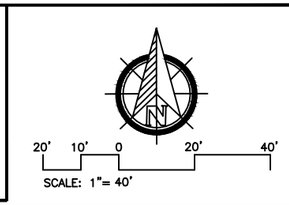
SHEET NO:
18





Key Map





EXISTING SANITARY SEWER MANHOLE #2

(RAISE EXISTING MANHOLE RIM ~0.34')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.34' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

EXISTING SANITARY SEWER MANHOLE #3

(RAISE EXISTING MANHOLE RIM ~0.73')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.73' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE'	SKYLINE HONEY LOCUST	
FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE'	SUNBURST HONEY LOCUST	
TILIA AMERICANA 'REDMOND'	REDMOND AMERICAN LINDEN	0
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE FREEMAN MAPLE	
ULMUS AMERICANA 'LEWIS & CLARK'	PRAIRIE EXPEDITION ELM	
FRAXIMINUS MADSHURICA 'MANCANA'	MANCANA MANCHURIAN ASH	0
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	
TILIA CORDATA X MONGOLICA 'HARVEST GOLD'	HARVEST GOLD LINDEN	
QUERCUS X BIMUNDORUM 'MIDWEST'	PRAIRIE STATURE OAK	2
TREE TYPE 4		
ACER NEGUNDO 'SENSATION'	SENSATION BOX ELDER	
GLEDITSIA TRIACANTHOSE INERMIS 'HARVE'	NORTHERN ACCLAIM HONEY LOCUST	
GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	IMPERIAL HONEY LOCUST	1
TREE TYPE 5		
CELTIS OCCIDENTALI	HACKBERRY	
GYMNOCCLADUS DIOICUS	KENTUCKY COFFEETREE	
ULMUS AMERICANA 'PRINCETON'	PRINCETON ELM	2

PROPERTY OWNERS - SEE TABLE ON SHEET 13

WATER MAIN NOTES			
STATION	OFFSET	T.O.P. ELEV	ITEM DESC
6+84.62	32.57'L	3063.10	6" GATE VALVE

STORM SEWER NOTES			
STATION	OFFSET	INV: ELEV	ITEM DESC
5+41.24	23.00'R	Pipe - (197): 3070.77' - Out	18" FLARED END SECTION (2)

PLANTING PLAN		
STATION	OFFSET	ITEM DESC
5+99.09	29'R	TREE TYPE 5
6+73.78	30'R	TREE TYPE 3
7+86.74	30'R	TREE TYPE 4

SANITARY SEWER MAIN		
STATION	OFFSET	ITEM DESC
5+12.53	1.49'R	EXISTING MH #2
6+62.59	0.34'R	EXISTING MH #3

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

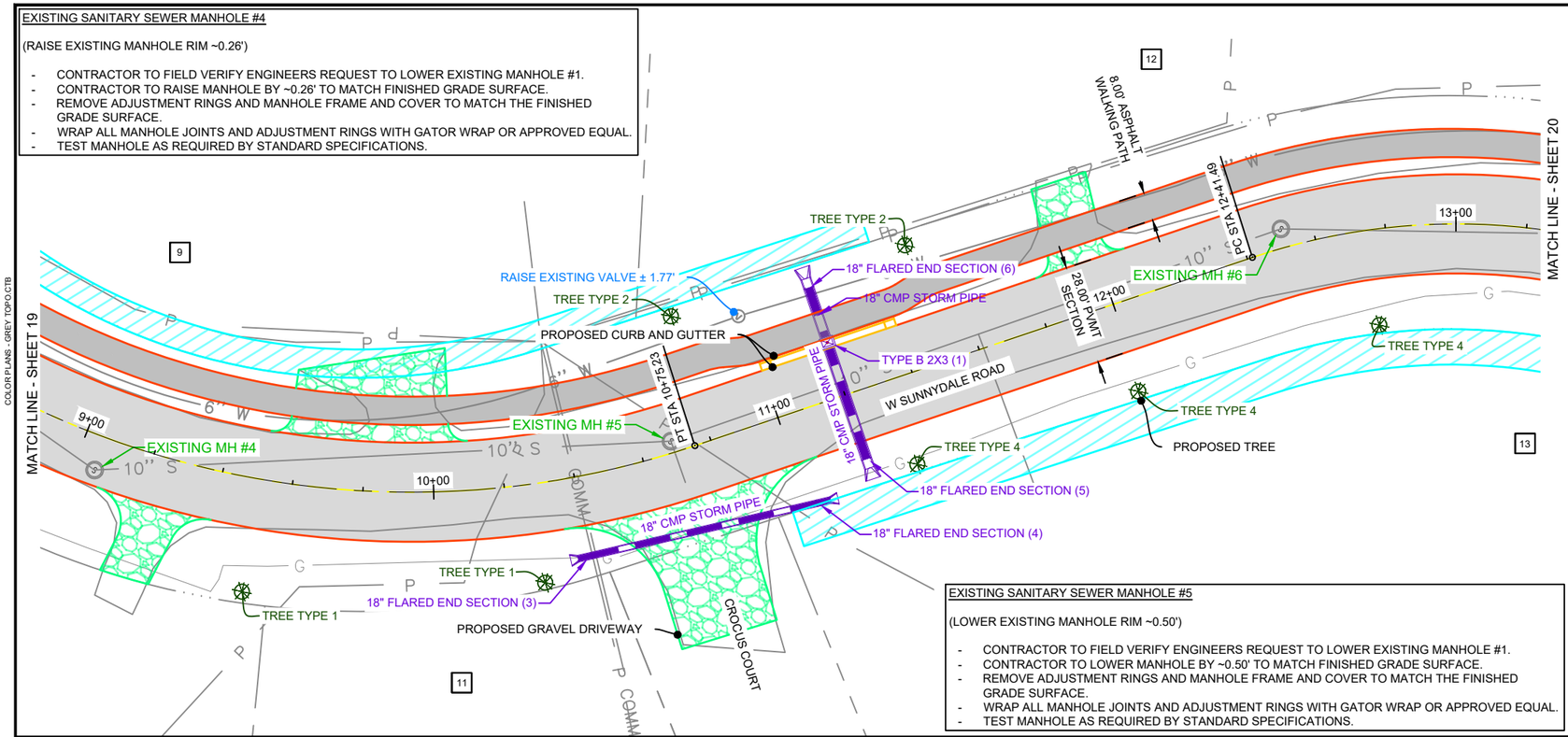
SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 5+00-9+00

SHEET NO:
19

EXISTING SANITARY SEWER MANHOLE #4

(RAISE EXISTING MANHOLE RIM ~0.26')

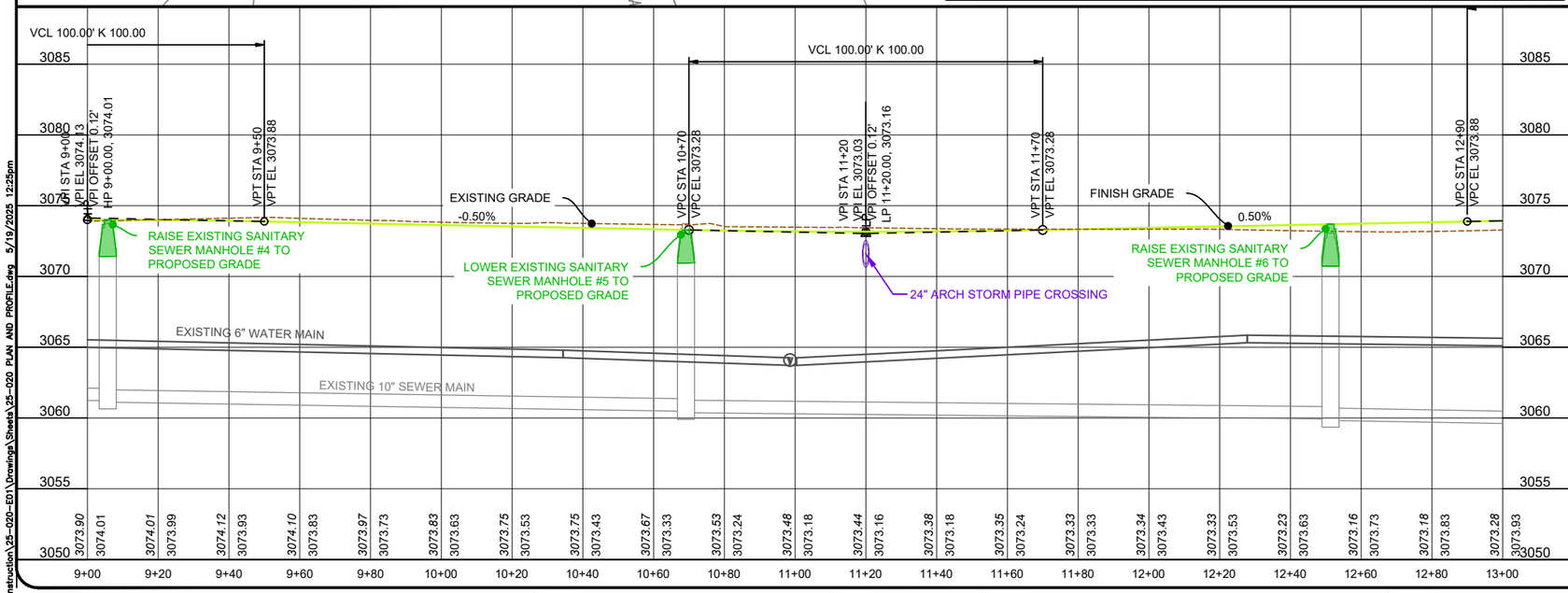
- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.26' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.



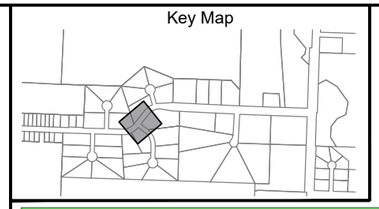
EXISTING SANITARY SEWER MANHOLE #5

(LOWER EXISTING MANHOLE RIM ~0.50')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO LOWER MANHOLE BY ~0.50' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.



Key Map



EXISTING SANITARY SEWER MANHOLE #6

(RAISE EXISTING MANHOLE RIM ~0.63')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.63' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE' FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE' TILIA AMERICANA 'REDMOND'	SKYLINE HONEY LOCUST SUNBURST HONEY LOCUST REDMOND AMERICAN LINDEN	2
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED' ULMUS AMERICANA 'LEWIS & CLARK' FRAXIMINUS MADSHURICA 'MANCANA'	AUTUMN BLAZE FREEMAN MAPLE PRAIRIE EXPEDITION ELM MANCANA MANCHURIAN ASH	2
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE' TILIA CORDATA X MONGOLICA 'HARVEST GOLD' QUERCUS X BIMUNDORUM 'MIDWEST'	GREENSPIRE LITTLELEAF LINDEN HARVEST GOLD LINDEN PRAIRIE STATURE OAK	0
TREE TYPE 4		
ACER NEGUNDO 'SENSATION' GLEDITSIA TRIACANTHOSE INERMIS 'HARVE' GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	SENSATION BOX ELDER NORTHERN ACCLAIM HONEY LOCUST IMPERIAL HONEY LOCUST	3
TREE TYPE 5		
CELTIS OCCIDENTALI GYMNOCCLADUS DIOICUS ULMUS AMERICANA 'PRINCETON'	HACKBERRY KENTUCKY COFFEETREE PRINCETON ELM	0

PROPERTY OWNERS - SEE TABLE ON SHEET 13

WATER MAIN NOTES

STATION	OFFSET	T.O.P. ELEV	ITEM DESC
10+98.59	30.74'L		6" GATE VALVE

STORM SEWER NOTES

STATION	OFFSET	INV: ELEV	ITEM DESC
10+40.64	22.68'R	Pipe - (208): 3072.01' - Out	18" FLARED END SECTION (3)
11+02.80	26.43'R	Pipe - (208): 3071.17' - In	18" FLARED END SECTION (4)
11+20.00	31.93'L	Pipe - (201) (1): 3070.69' - In	18" FLARED END SECTION (6)
11+20.00	15.66'L	Pipe - (201): 3070.77' - In Pipe - (201) (1): 3070.77' - Out	TYPE B 2X3 (1)
11+20.00	19.01'R	Pipe - (201): 3070.94' - Out	18" FLARED END SECTION (5)

PLANTING PLAN

STATION	OFFSET	ITEM DESC
9+51.09	32'R	TREE TYPE 1
10+27.82	28'R	TREE TYPE 1
11+33.09	25'R	TREE TYPE 4
11+98.81	26'R	TREE TYPE 4
11+49.58	35'L	TREE TYPE 2
10+80.52	37'L	TREE TYPE 2
12+74.42	27'R	TREE TYPE 4

SANITARY SEWER MAIN

STATION	OFFSET	ITEM DESC
9+05.74	9.67'R	EXISTING MH #4
10+69.15	3.31'L	EXISTING MH #5
12+51.37	5.34'L	EXISTING MH #6

20' 10' 0 20' 40'
SCALE: 1"= 40'

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.16

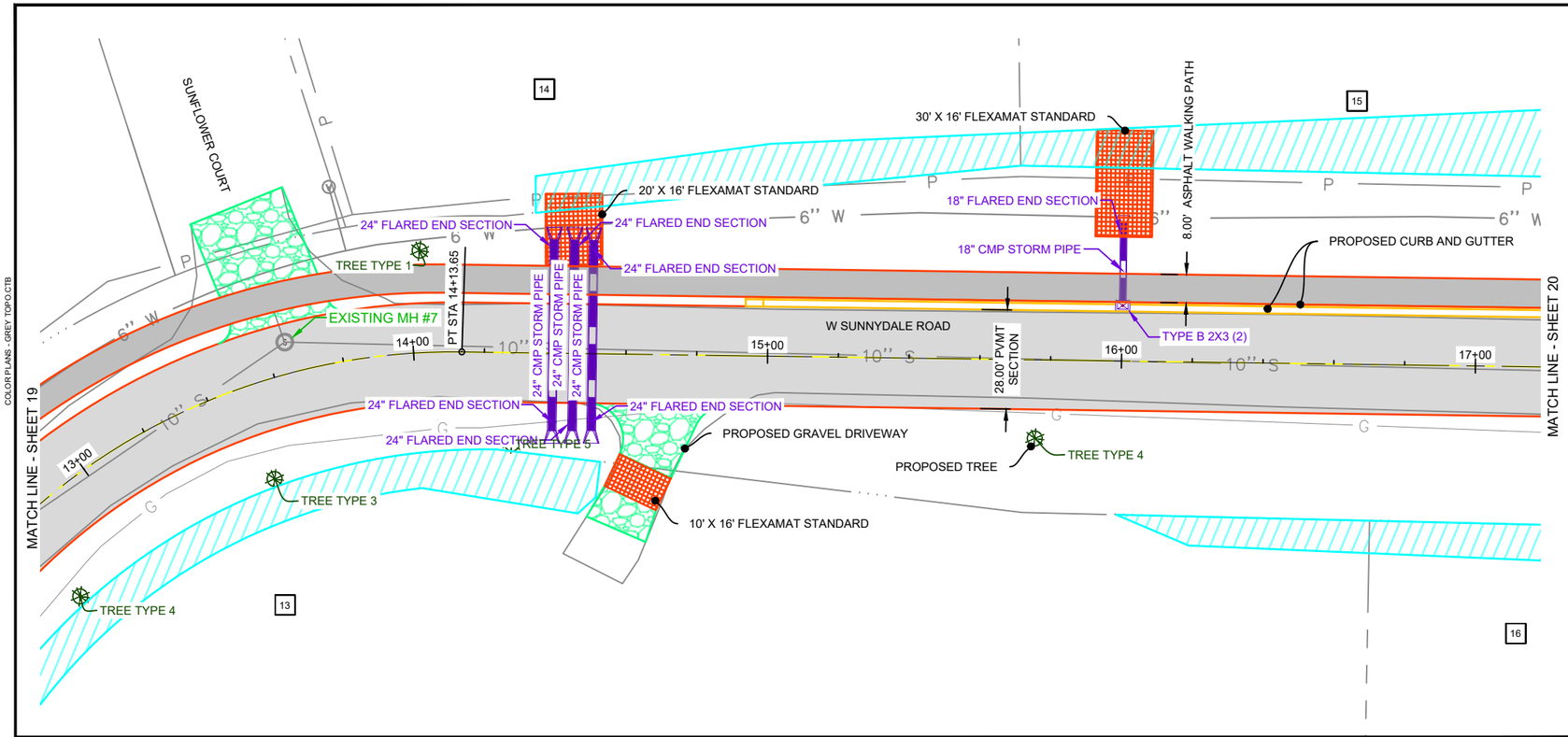
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

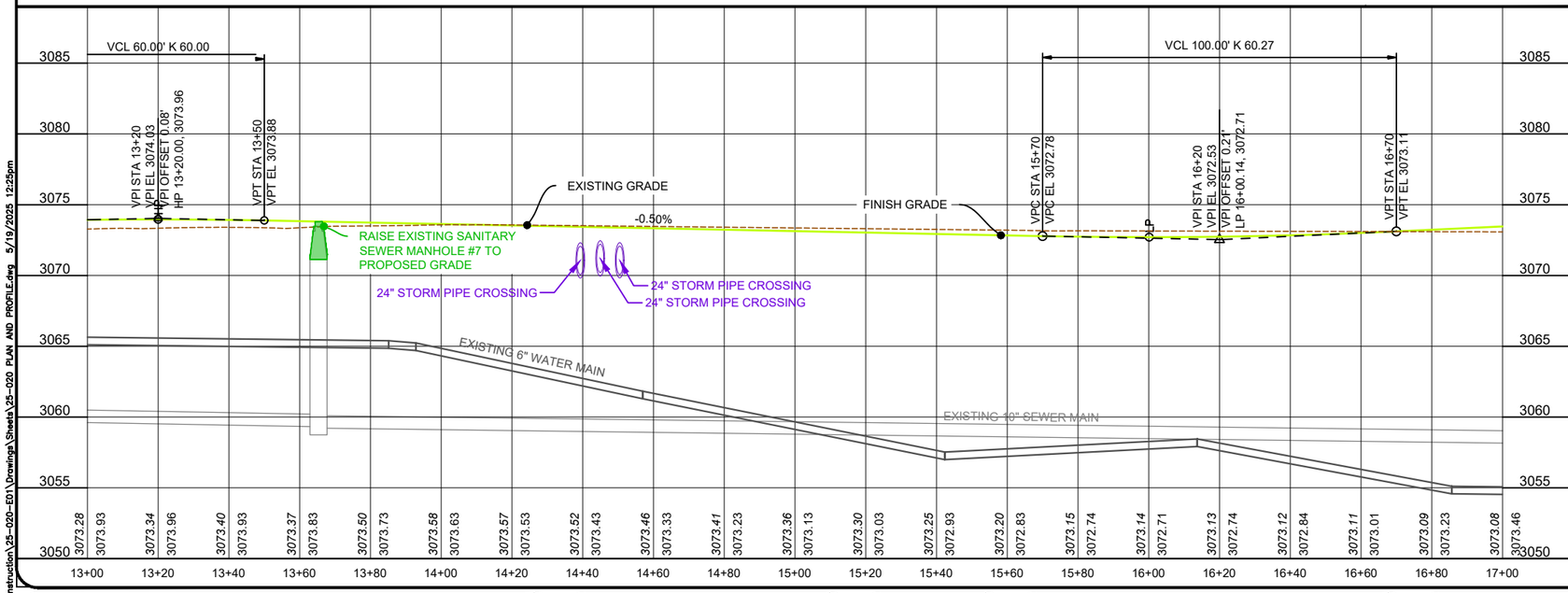
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

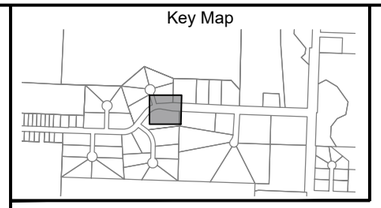
SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 9+00-13+00

SHEET NO:
20





Key Map



EXISTING SANITARY SEWER MANHOLE #7

(RAISE EXISTING MANHOLE RIM ~0.34')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO RAISE EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.34' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE' FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE' TILIA AMERICANA 'REDMOND'	SKYLINE HONEY LOCUST SUNBURST HONEY LOCUST REDMOND AMERICAN LINDEN	1
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED' ULMUS AMERICANA 'LEWIS & CLARK' FRAXIMINUS MADSHURICA 'MANCANA'	AUTUMN BLAZE FREEMAN MAPLE PRAIRIE EXPEDITION ELM MANCANA MANCHURIAN ASH	0
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE' TILIA CORDATA X MONGOLICA 'HARVEST GOLD' QUERCUS X BIMUNDORUM 'MIDWEST'	GREENSPIRE LITTLELEAF LINDEN HARVEST GOLD LINDEN PRAIRIE STATURE OAK	1
TREE TYPE 4		
ACER NEGUNDO 'SENSATION' GLEDITSIA TRIACANTHOSE INERMIS 'HARVE' GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	SENSATION BOX ELDER NORTHERN ACCLAIM HONEY LOCUST IMPERIAL HONEY LOCUST	2
TREE TYPE 5		
CELTIS OCCIDENTALI GYMNOCCLADUS DIOICUS ULMUS AMERICANA 'PRINCETON'	HACKBERRY KENTUCKY COFFEETREE PRINCETON ELM	0

PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES

STATION	OFFSET	INV: ELEV	ITEM DESC
14+39.34	29.58'L	Pipe - (260): 3069.34' - In	24" FLARED END SECTION
14+39.34	19.49'R	Pipe - (260): 3070.55' - Out	24" FLARED END SECTION
14+45.04	19.36'R	Pipe - (210): 3070.69' - In	24" FLARED END SECTION
14+45.05	29.58'L	Pipe - (206): 3069.46' - In	24" FLARED END SECTION
14+50.47	29.58'L	Pipe - (261): 3069.34' - In	24" FLARED END SECTION
14+50.47	19.25'R	Pipe - (261): 3070.55' - Out	24" FLARED END SECTION
16+00.14	35.13'L	Pipe - (263): 3068.88' - In	18" FLARED END SECTION
16+00.14	15.67'L	Pipe - (263): 3069.26' - Out	TYPE B 2X3 (2)

PLANTING PLAN

STATION	OFFSET	ITEM DESC
13+50.56	27'R	TREE TYPE 3
14+02.99	29'L	TREE TYPE 1
15+75.81	22'R	TREE TYPE 4

SANITARY SEWER MAIN

STATION	OFFSET	ITEM DESC
13+65.35	8.85'L	EXISTING MH #7

N

20' 10' 0 20' 40'

SCALE: 1"= 40'

TDG

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Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.16

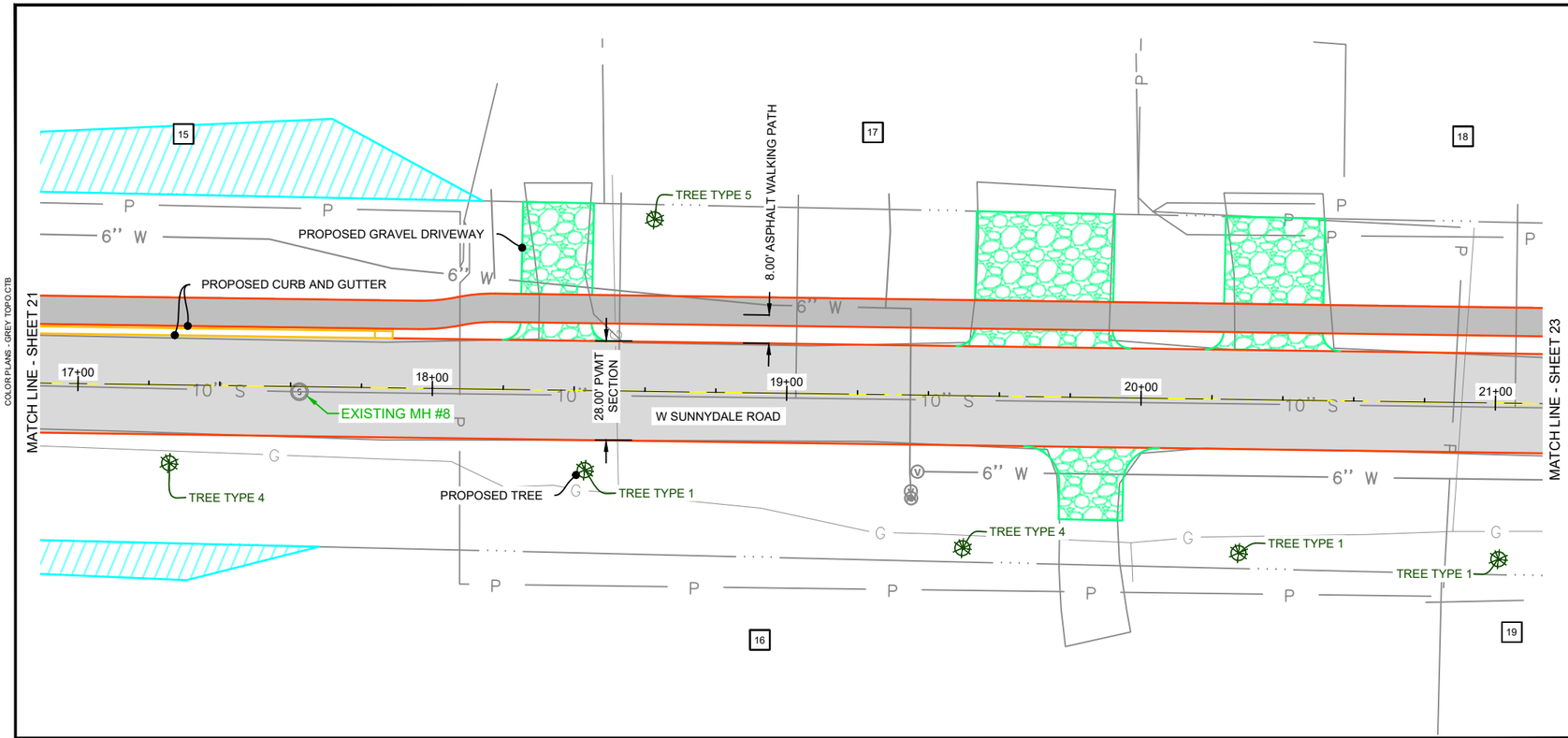
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

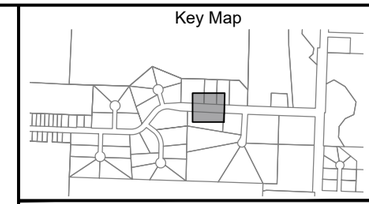
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 13+00-17+00

SHEET NO:
21





EXISTING SANITARY SEWER MANHOLE #8

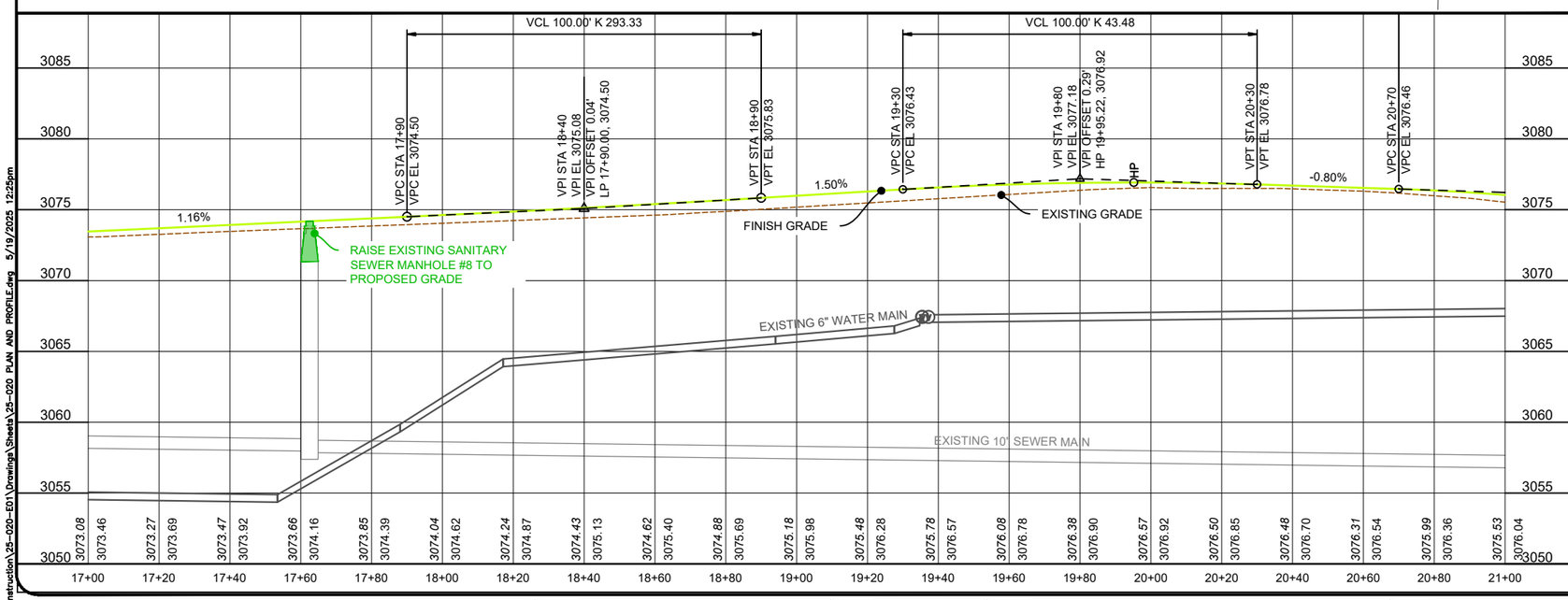
(RAISE EXISTING MANHOLE RIM ~0.52')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.52' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

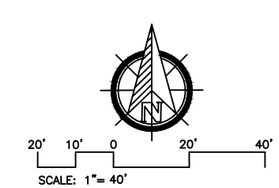
BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE' FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE' TILIA AMERICANA 'REDMOND'	SKYLINE HONEY LOCUST SUNBURST HONEY LOCUST REDMOND AMERICAN LINDEN	3
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED' ULMUS AMERICANA 'LEWIS & CLARK' FRAXIMINUS MADSHURICA 'MANCANA'	AUTUMN BLAZE FREEMAN MAPLE PRAIRIE EXPEDITION ELM MANCANA MANCHURIAN ASH	0
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE' TILIA CORDATA X MONGOLICA 'HARVEST GOLD' QUERCUS X BIMUNDORUM 'MIDWEST'	GREENSPIRE LITTLELEAF LINDEN HARVEST GOLD LINDEN PRAIRIE STATURE OAK	0
TREE TYPE 4		
ACER NEGUNDO 'SENSATION' GLEDITSIA TRIACANTHOSE INERMIS 'HARVE' GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	SENSATION BOX ELDER NORTHERN ACCLAIM HONEY LOCUST IMPERIAL HONEY LOCUST	2
TREE TYPE 5		
CELTIS OCCIDENTALI GYMNOCCLADUS DIOICUS ULMUS AMERICANA 'PRINCETON'	HACKBERRY KENTUCKY COFFEETREE PRINCETON ELM	1

PROPERTY OWNERS - SEE TABLE ON SHEET 13



PLANTING PLAN		
STATION	OFFSET	ITEM DESC
17+26.00	22'R	TREE TYPE 4
18+43.28	22'R	TREE TYPE 1
18+62.01	49'L	TREE TYPE 5
19+50.16	43'R	TREE TYPE 4
20+28.09	43'R	TREE TYPE 1

SANITARY SEWER MAIN		
STATION	OFFSET	ITEM DESC
17+62.51	1.45'R	EXISTING MH #8



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147 Chisholm Drive
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605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

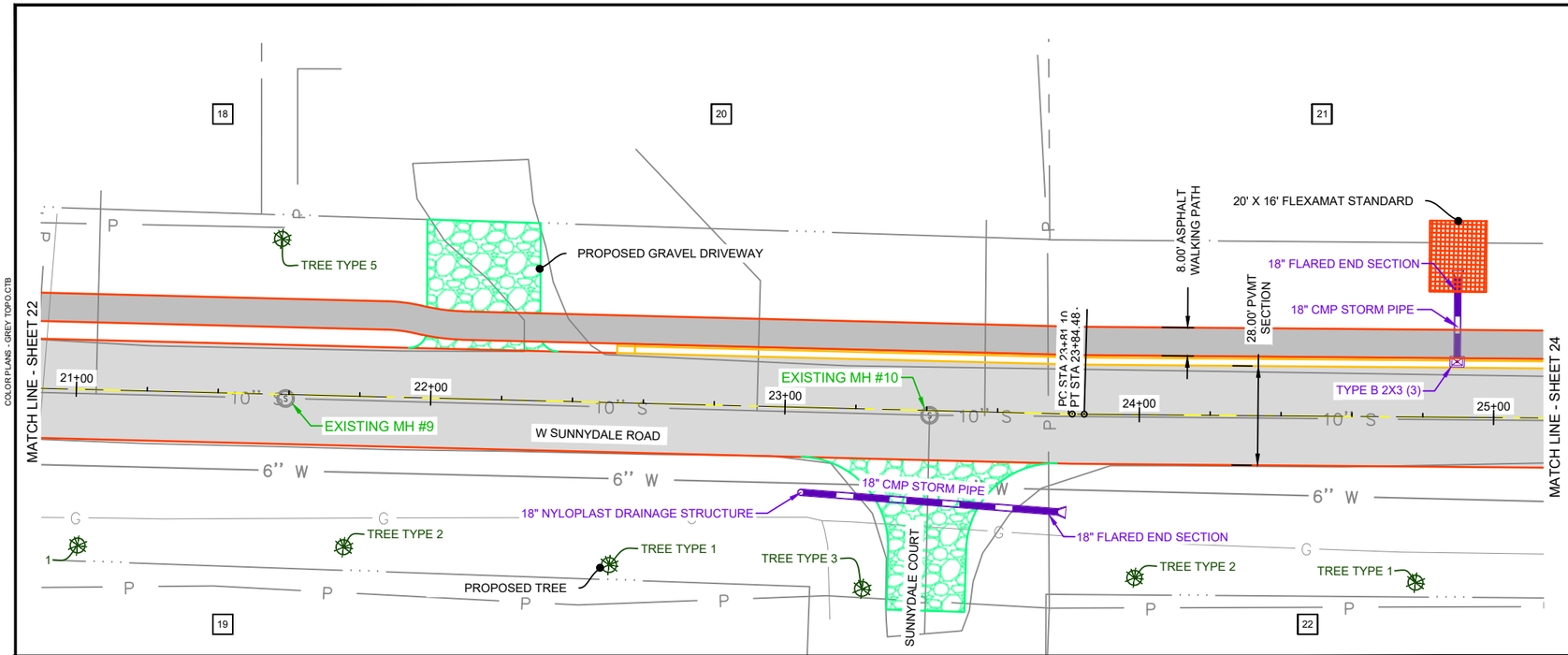
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

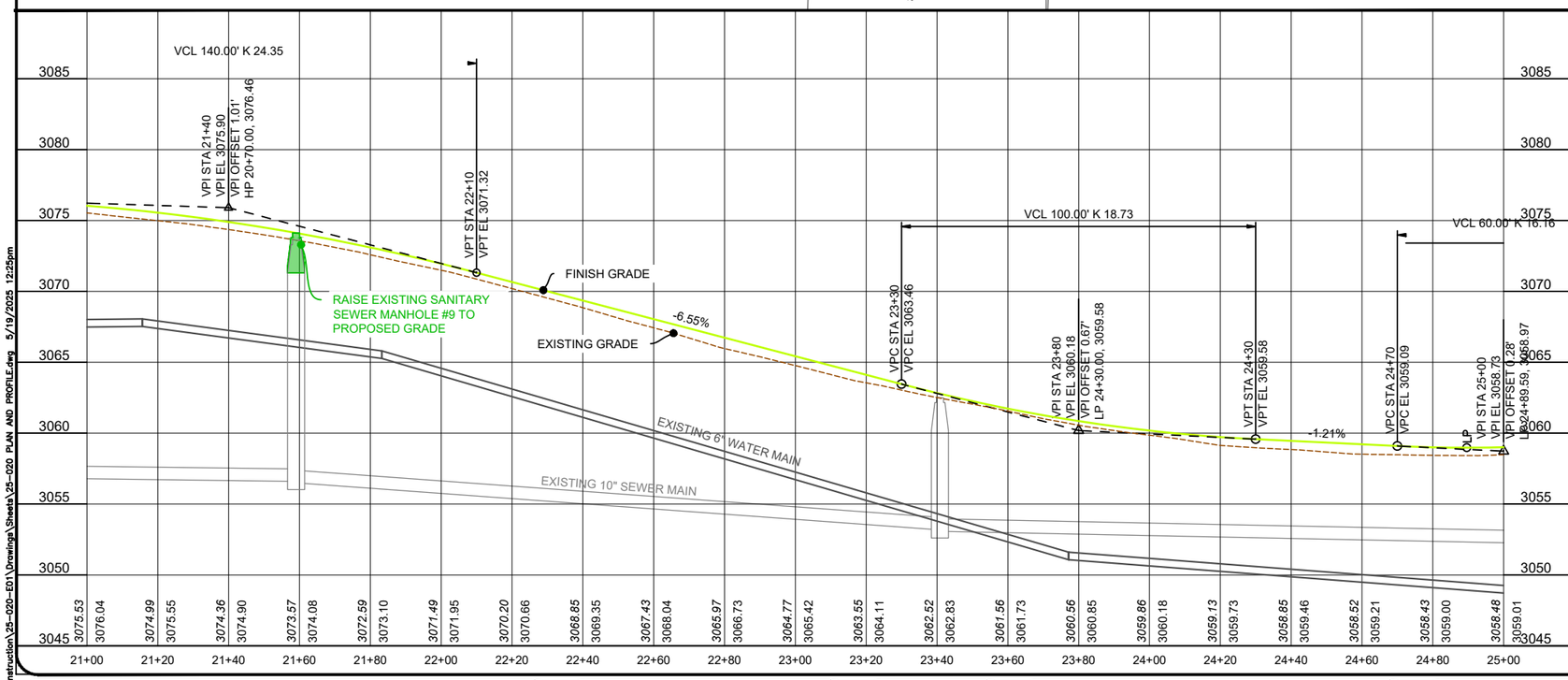
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

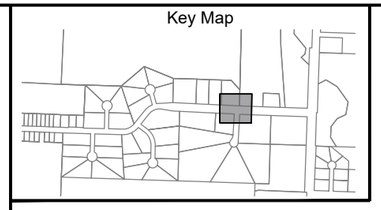
SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 17+00-21+00

SHEET NO:
22





Key Map



EXISTING SANITARY SEWER MANHOLE #9

(RAISE EXISTING MANHOLE RIM ~049')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.49' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE' FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE' TILIA AMERICANA 'REDMOND'	SKYLINE HONEY LOCUST SUNBURST HONEY LOCUST REDMOND AMERICAN LINDEN	2
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED' ULMUS AMERICANA 'LEWIS & CLARK' FRAXIMINUS MADSHURICA 'MANCANA'	AUTUMN BLAZE FREEMAN MAPLE PRAIRIE EXPEDITION ELM MANCANA MANCHURIAN ASH	2
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE' TILIA CORDATA X MONGOLICA 'HARVEST GOLD' QUERCUS X BIMUNDORUM 'MIDWEST'	GREENSPIRE LITTLELEAF LINDEN HARVEST GOLD LINDEN PRAIRIE STATURE OAK	1
TREE TYPE 4		
ACER NEGUNDO 'SENSATION' GLEDITSIA TRIACANTHOSE INERMIS 'HARVE' GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE'	SENSATION BOX ELDER NORTHERN ACCLAIM HONEY LOCUST IMPERIAL HONEY LOCUST	0
TREE TYPE 5		
CELTIS OCCIDENTALI GYMNOCCLADUS DIOICUS ULMUS AMERICANA 'PRINCETON'	HACKBERRY KENTUCKY COFFEETREE PRINCETON ELM	1

PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES

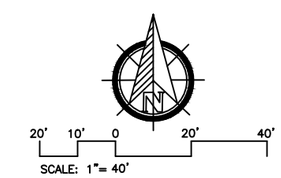
STATION	OFFSET	INV: ELEV	ITEM DESC
23+05.10	24.00'R	Pipe - (204): 3060.06' - Out	18" NYLOPLAST DRAINAGE STRUCTURE
23+73.92	27.46'R	Pipe - (204): 3057.54' - In	18" FLARED END SECTION
24+89.57	15.67'L	Pipe - (264): 3055.52' - Out	TYPE B 2X3 (3)
24+89.59	35.38'L	Pipe - (264): 3055.14' - In	18" FLARED END SECTION

PLANTING PLAN

STATION	OFFSET	ITEM DESC
21+56.93	44'L	TREE TYPE 5
21+01.43	44'R	TREE TYPE 1
21+76.44	43'R	TREE TYPE 2
22+51.46	46'R	TREE TYPE 1
23+23.00	51'R	TREE TYPE 3
23+98.98	46'R	TREE TYPE 2
24+78.31	47'R	TREE TYPE 1

SANITARY SEWER MAIN

STATION	OFFSET	ITEM DESC
21+59.06	1.14'R	EXISTING MH #9
23+40.83	1.34'R	EXISTING MH #10



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SOUTH DAKOTA
2025.05.19

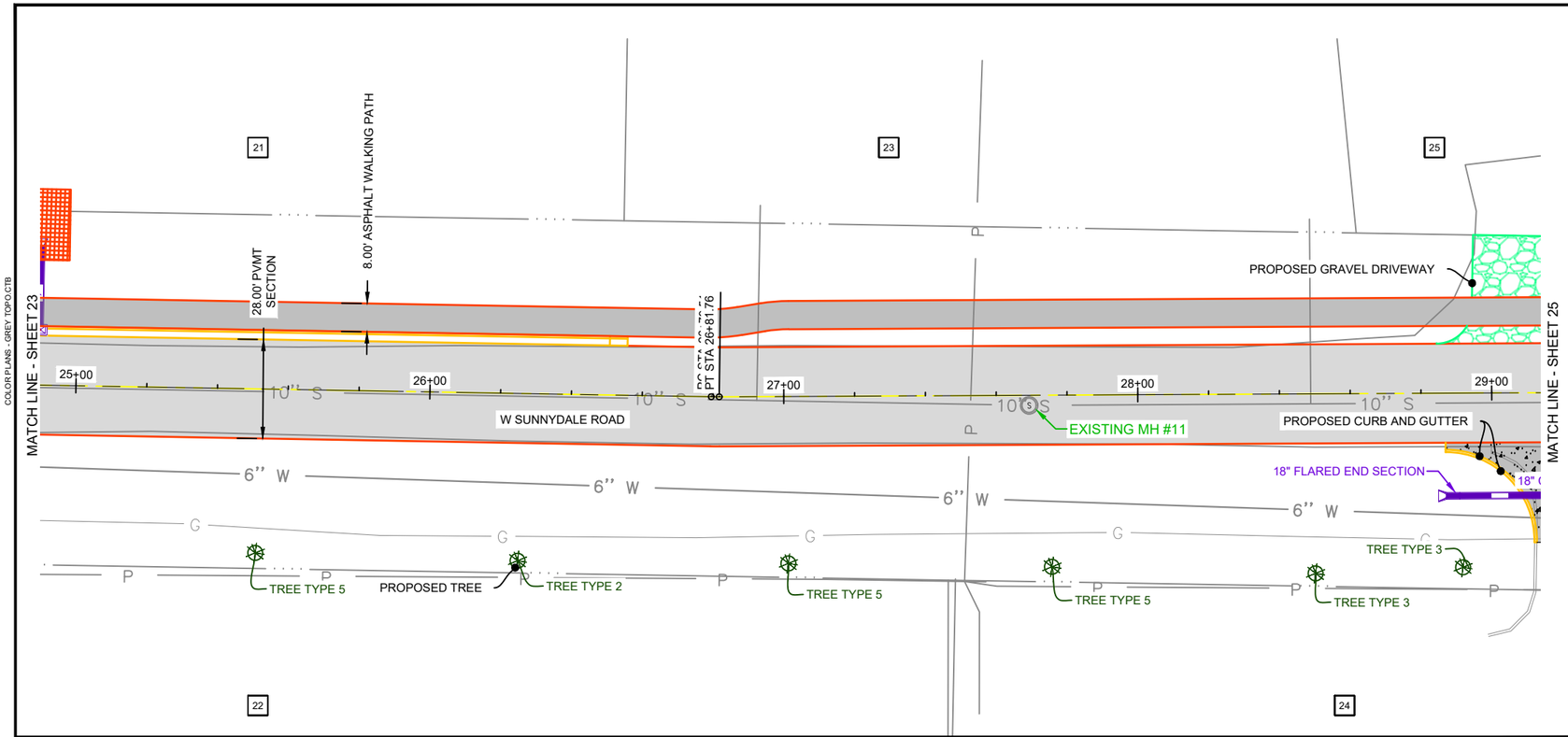
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

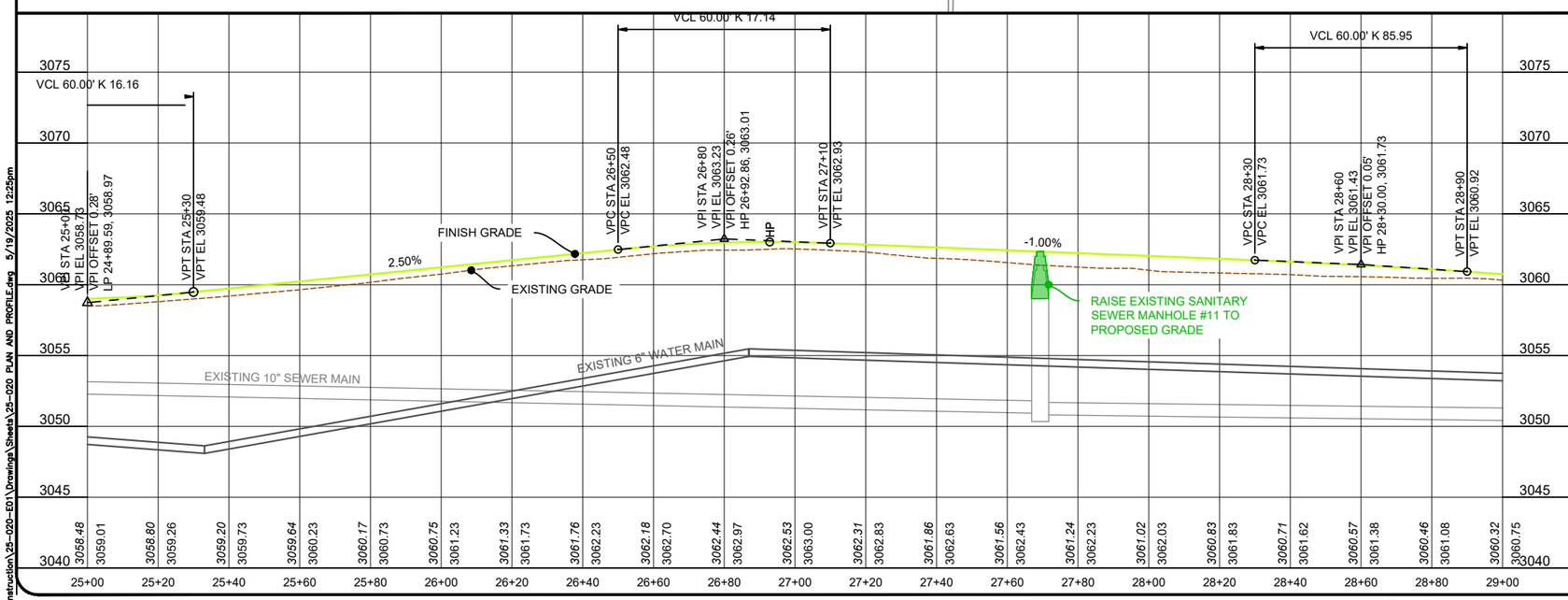
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

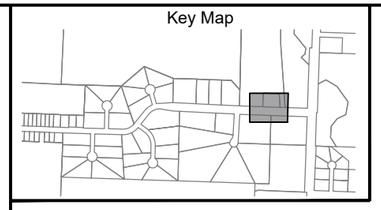
SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 21+00-25+00

SHEET NO:
23





Key Map



EXISTING SANITARY SEWER MANHOLE #11

(RAISE EXISTING MANHOLE RIM ~0.98')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #11.
- CONTRACTOR TO RAISE MANHOLE BY ~0.98' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE'	SKYLINE HONEY LOCUST	
FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE'	SUNBURST HONEY LOCUST	
TILIA AMERICANA 'REDMOND'	REDMOND AMERICAN LINDEN	0
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE FREEMAN MAPLE	
ULMUS AMERICANA 'LEWIS & CLARK'	PRAIRIE EXPEDITION ELM	
FRAXIMINUS MADSHURICA 'MANCANA'	MANCANA MANCHURIAN ASH	1
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	
TILIA CORDATA X MONGOLICA 'HARVEST GOLD'	HARVEST GOLD LINDEN	
QUERCUS X BIMUNDORUM 'MIDWEST'	PRAIRIE STATURE OAK	2
TREE TYPE 4		
ACER NEGUNDO 'SENSATION'	SENSATION BOX ELDER	
GLEDITSIA TRIACANTHOSE INERMIS 'HARVE'	NORTHERN ACCLAIM HONEY LOCUST	
GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	IMPERIAL HONEY LOCUST	0
TREE TYPE 5		
CELTIS OCCIDENTALI	HACKBERRY	
GYMNOCLADIUS DIOICUS	KENTUCKY COFFEETREE	
ULMUS AMERICANA 'PRINCETON'	PRINCETON ELM	3

PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES

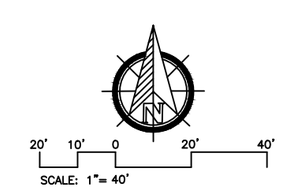
STATION	OFFSET	INV: ELEV	ITEM DESC
28+90.84	29.00'R	Pipe - (202): 3058.50' - Out	18" FLARED END SECTION

PLANTING PLAN

STATION	OFFSET	ITEM DESC
25+51.46	46'R	TREE TYPE 5
26+25.60	47'R	TREE TYPE 2
27+01.06	47'R	TREE TYPE 5
27+75.51	48'R	TREE TYPE 5
28+49.99	51'R	TREE TYPE 3
28+93.28	49'R	TREE TYPE 3

SANITARY SEWER MAIN

STATION	OFFSET	ITEM DESC
27+69.30	2.84'R	EXISTING MH #11



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Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.16

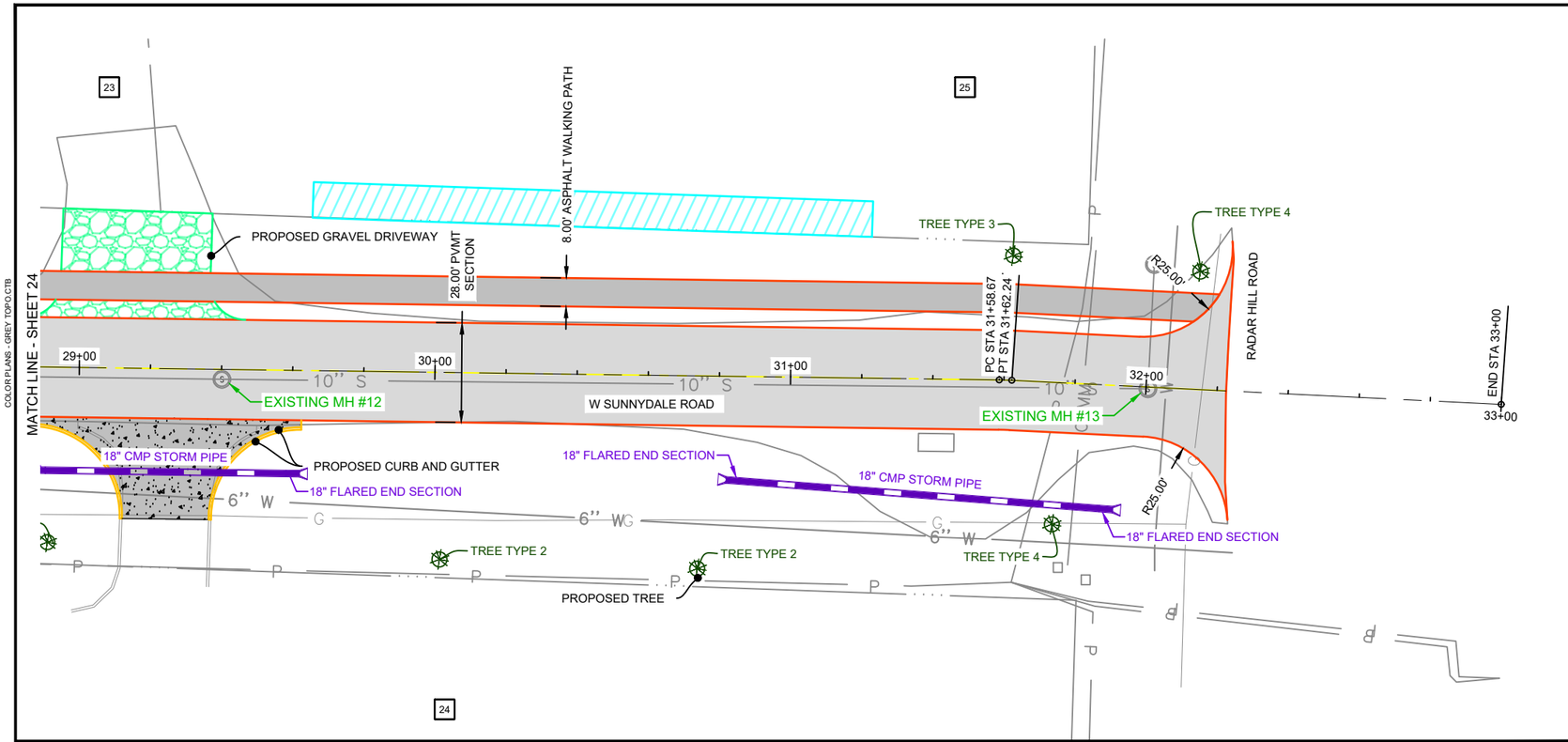
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

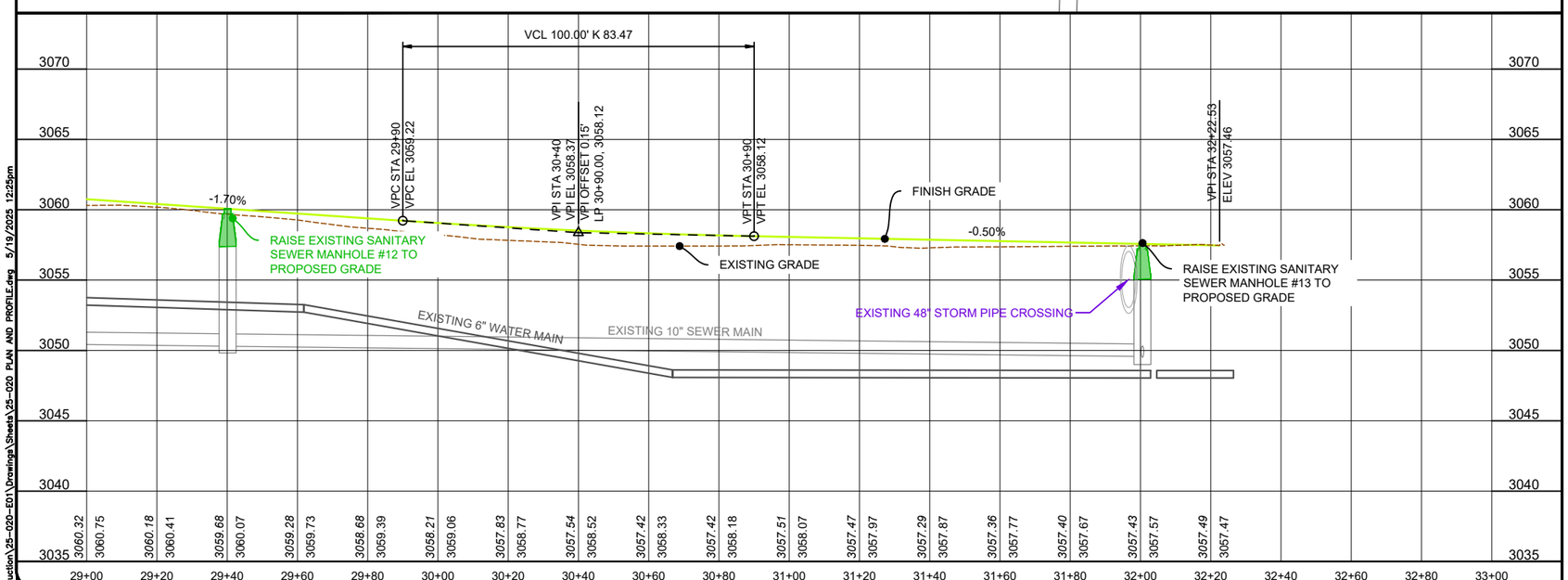
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 25+00-29+00

SHEET NO:
24





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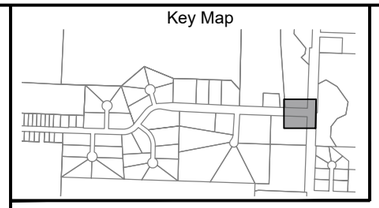

EXISTING SANITARY SEWER MANHOLE #12

(RAISE EXISTING MANHOLE RIM ~0.34')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.34 TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

EXISTING SANITARY SEWER MANHOLE #13

(RAISE EXISTING MANHOLE RIM ~0.18')

- CONTRACTOR TO FIELD VERIFY ENGINEERS REQUEST TO LOWER EXISTING MANHOLE #1.
- CONTRACTOR TO RAISE MANHOLE BY ~0.18' TO MATCH FINISHED GRADE SURFACE.
- REMOVE ADJUSTMENT RINGS AND MANHOLE FRAME AND COVER TO MATCH THE FINISHED GRADE SURFACE.
- WRAP ALL MANHOLE JOINTS AND ADJUSTMENT RINGS WITH GATOR WRAP OR APPROVED EQUAL.
- TEST MANHOLE AS REQUIRED BY STANDARD SPECIFICATIONS.

PROJECT PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITIES
TREE TYPE 1		
GLEDITSIA TRIACANTHOSE INERMIS 'SKYCOLE' FLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE' TILIA AMERICANA 'REDMOND'	SKYLINE HONEY LOCUST SUNBURST HONEY LOCUST REDMOND AMERICAN LINDEN	0
TREE TYPE 2		
ACER X FREEMANII 'JEFFERSRED' ULMUS AMERICANA 'LEWIS & CLARK' FRAXIMINUS MADSHURICA 'MANCANA'	AUTUMN BLAZE FREEMAN MAPLE PRAIRIE EXPEDITION ELM MANCANA MANCHURIAN ASH	2
TREE TYPE 3		
TILIA CORDATA 'GREENSPIRE' TILIA CORDATA X MONGOLICA 'HARVEST GOLD' QUERCUS X BIMUNDORUM 'MIDWEST'	GREENSPIRE LITTLELEAF LINDEN HARVEST GOLD LINDEN PRAIRIE STATURE OAK	1
TREE TYPE 4		
ACER NEGUNDO 'SENSATION' GLEDITSIA TRIACANTHOSE INERMIS 'HARVE' GLEDITSIA TRIANCANTHOS INERMIS 'IMPCOLE	SENSATION BOX ELDER NORTHERN ACCLAIM HONEY LOCUST IMPERIAL HONEY LOCUST	2
TREE TYPE 5		
CELTIS OCCIDENTALI GYMNOCCLADUS DIOICUS ULMUS AMERICANA 'PRINCETON'	HACKBERRY KENTUCKY COFFEETREE PRINCETON ELM	0

PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES

STATION	OFFSET	INV: ELEV	ITEM DESC
29+58.52	29.00'R	Pipe - (202): 3057.36' - In	18" FLARED END SECTION
30+85.98	29.38'R	Pipe - (262): 3055.78' - Out	18" FLARED END SECTION
31+88.53	34.79'R	Pipe - (262): 3054.08' - In	18" FLARED END SECTION

PLANTING PLAN

STATION	OFFSET	ITEM DESC
30+01.97	53'R	TREE TYPE 2
30+74.48	54'R	TREE TYPE 2
31+75.45	40'R	TREE TYPE 4
31+61.27	35'L	TREE TYPE 3
32+13.68	33'L	TREE TYPE 4

SANITARY SEWER MAIN

STATION	OFFSET	ITEM DESC
29+40.13	2.77'R	EXISTING MH #12
32+00.55	0.49'R	EXISTING MH #13
32+00.63	34.47'L	EXISTING MH #14

20' 10' 0 20' 40'
SCALE: 1"= 40'

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147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder - Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER RES. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025-05-19

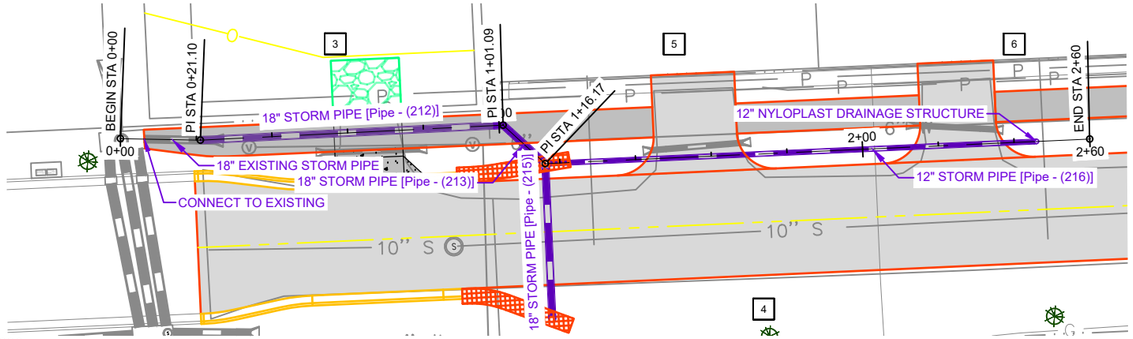
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

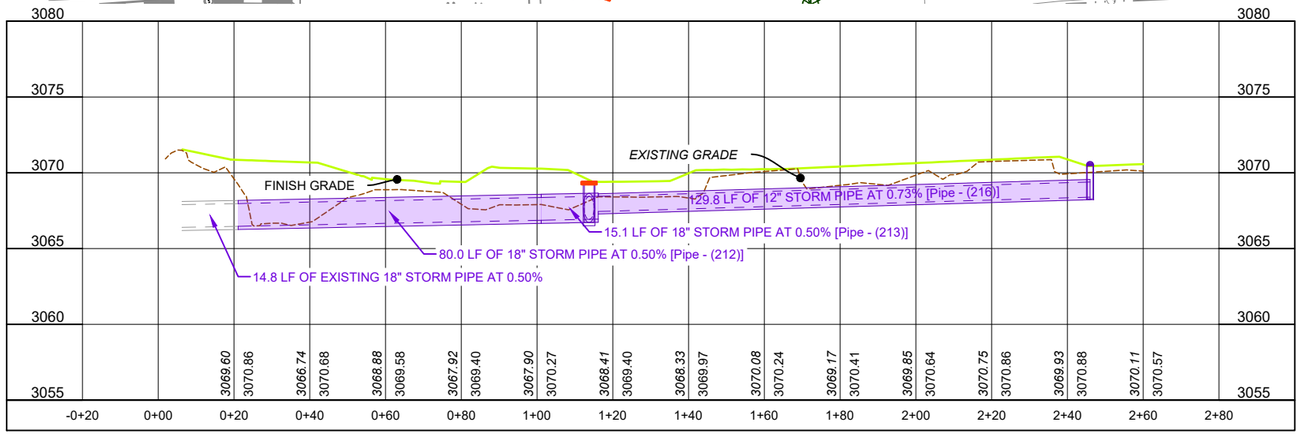
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

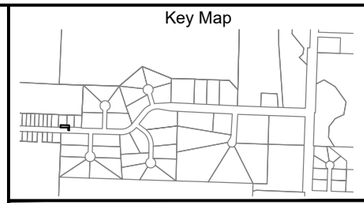
SHEET NAME:
W. SUNNYDALE PLAN AND PROFILE - 29+00-33+00

SHEET NO:
25





Key Map

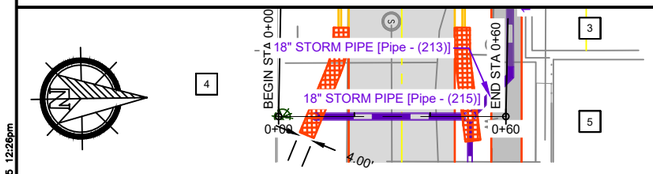


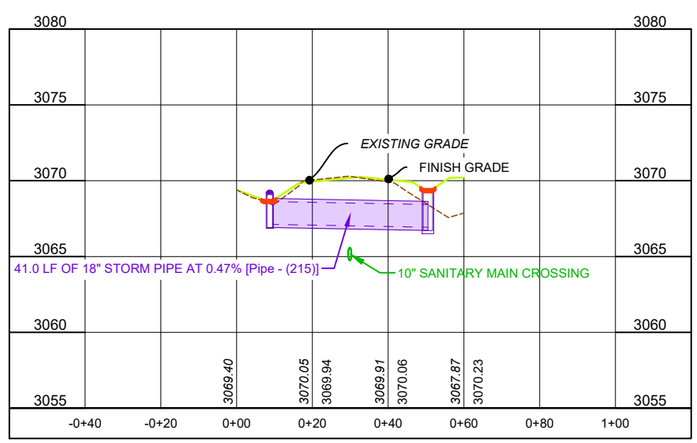
PROPERTY OWNERS - SEE TABLE ON SHEET 13

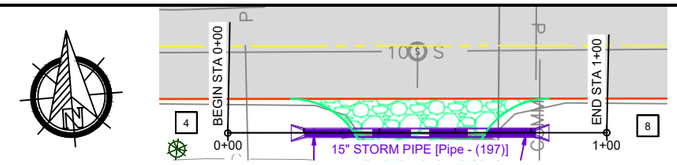
NOTE:
ALL STATIONS AND OFFSETS ARE BASED ON THE WEST SUNNY DALE ROAD ALIGNMENT

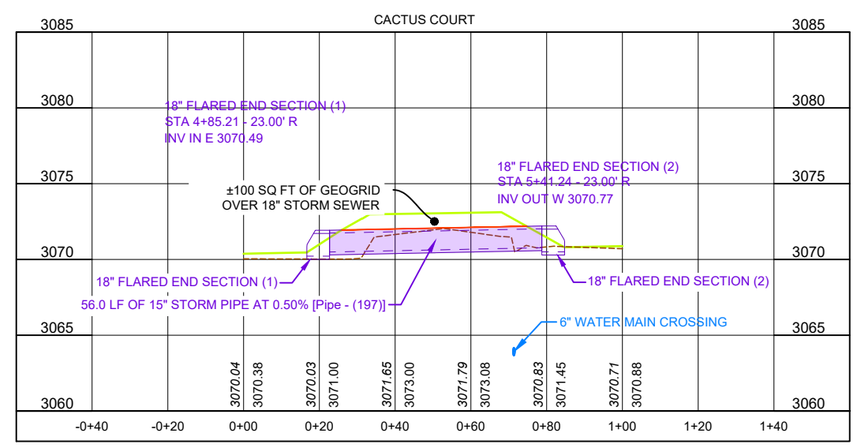
STORM SEWER NOTES

STATION	OFFSET	INV: ELEV	ITEM DESC
1+36.09	29.23'L	Pipe - (211): 3066.40' - Out	CONNECT TO EXISTING
2+30.87	28.66'L	Pipe - (212): 3066.87' - In Pipe - (213): 3066.87' - Out	18" 45° BEND
2+41.54	18.00'L	Pipe - (213): 3066.95' - In Pipe - (216): 3067.45' - Out Pipe - (215): 3066.93' - In	30" NYLOPLAST DRAINAGE STRUCTURE
2+41.54	23.00'R	Pipe - (215): 3067.12' - Out	18" NYLOPLAST DRAINAGE STRUCTURE
3+71.35	18.00'L	Pipe - (216): 3068.39' - In	12" NYLOPLAST DRAINAGE STRUCTURE
4+85.21	23.00'R	Pipe - (197): 3070.49' - In	18" FLARED END SECTION (1)
5+41.24	23.00'R	Pipe - (197): 3070.77' - Out	18" FLARED END SECTION (2)









20' 10' 0 20' 40'
SCALE: 1"= 40'

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

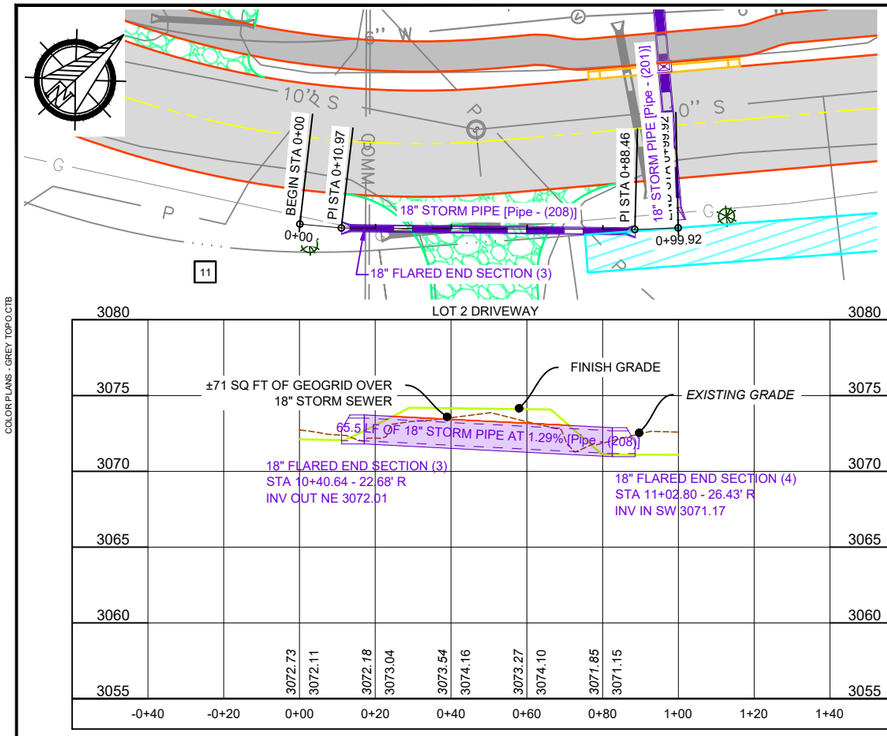
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

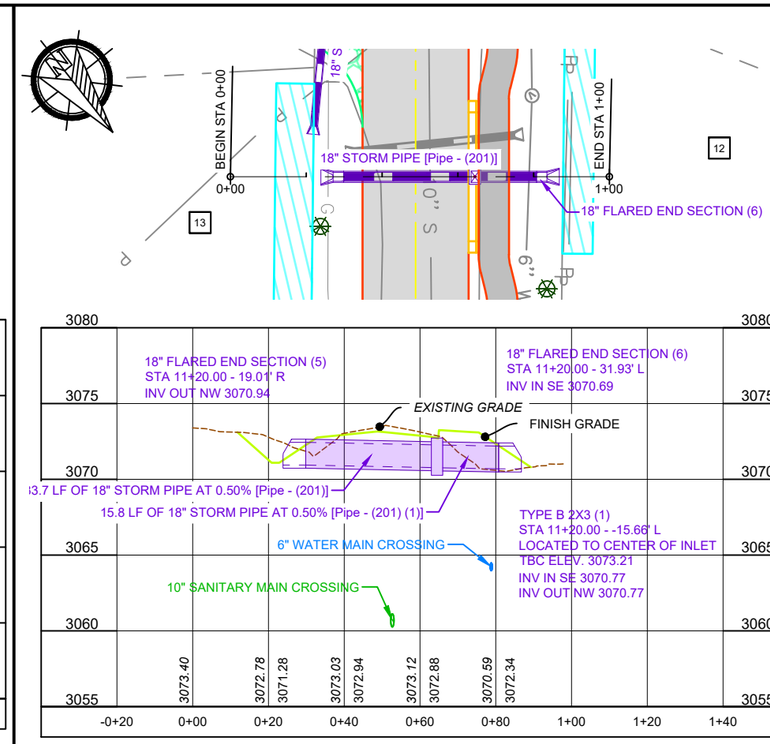
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

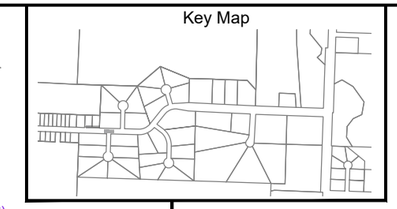
SHEET NAME: **STORM PLAN AND PROFILES - 1 OF 3**

SHEET NO: **26**





Key Map

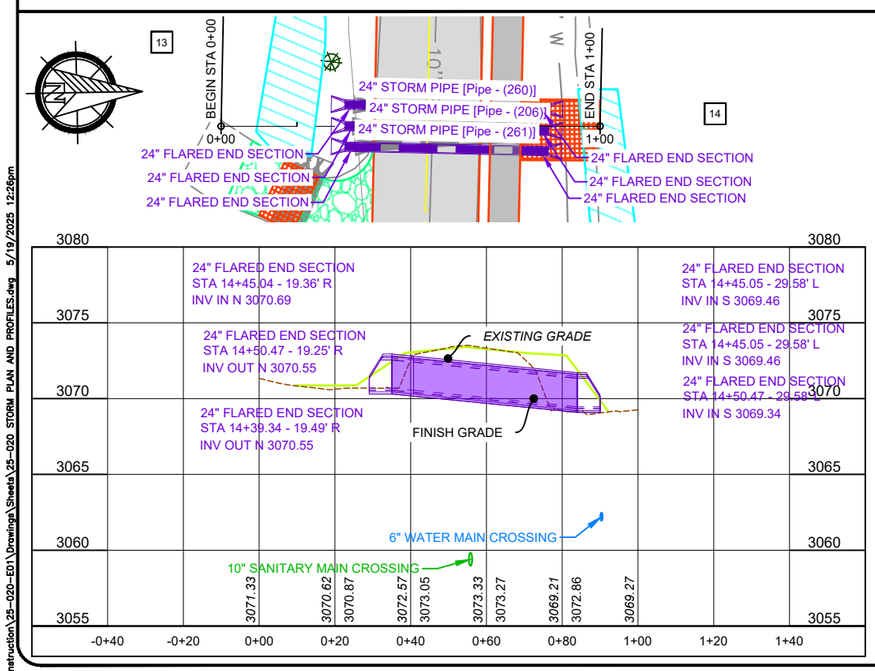


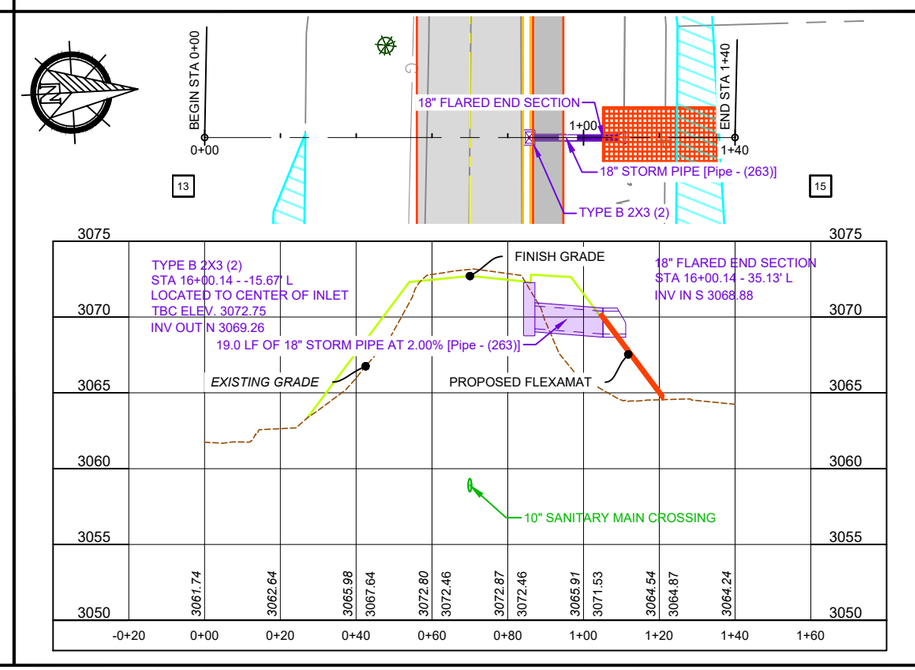
PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES			
STATION	OFFSET	INV: ELEV	ITEM DESC
10+40.64	22.68'R	Pipe - (208): 3072.01' - Out	18" FLARED END SECTION (3)
11+02.80	26.43'R	Pipe - (208): 3071.17' - In	18" FLARED END SECTION (4)
11+20.00	31.93'L	Pipe - (201) (1): 3070.69' - In	18" FLARED END SECTION (6)
11+20.00	19.01'R	Pipe - (201): 3070.94' - Out	18" FLARED END SECTION (5)
14+39.34	29.58'L	Pipe - (260): 3069.34' - In	24" FLARED END SECTION
14+39.34	19.49'R	Pipe - (260): 3070.55' - Out	24" FLARED END SECTION
14+45.04	19.36'R	Pipe - (210): 3070.69' - In	24" FLARED END SECTION
14+45.05	29.58'L	Pipe - (206): 3069.46' - In	24" FLARED END SECTION
14+50.47	29.58'L	Pipe - (261): 3069.34' - In	24" FLARED END SECTION
14+50.47	19.25'R	Pipe - (261): 3070.55' - Out	24" FLARED END SECTION
16+00.14	35.13'L	Pipe - (263): 3068.88' - In	18" FLARED END SECTION
16+00.14	15.67'L	Pipe - (263): 3069.26' - Out	TYPE B 2X3 (2)

NOTE:

ALL STATIONS AND OFFSETS ARE BASED ON THE WEST SUNNY DALE ROAD ALIGNMENT





20' 10' 0 20' 40'
SCALE: 1"= 40'

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025-05-19

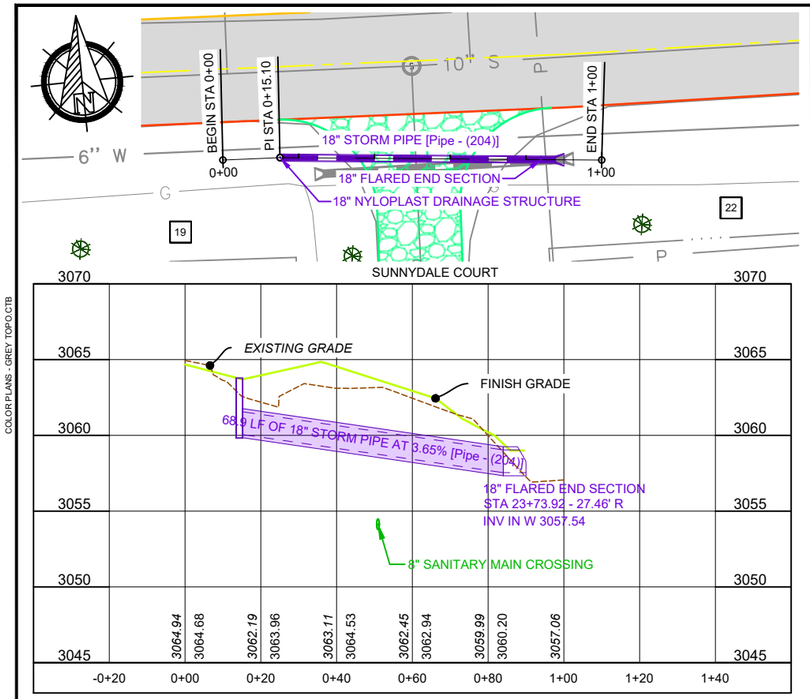
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

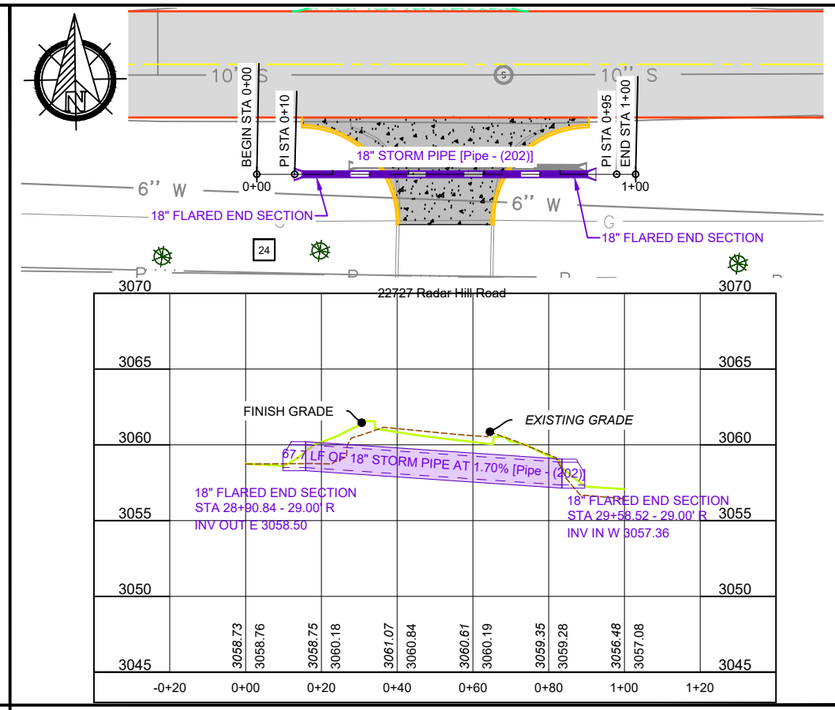
REVISIONS:

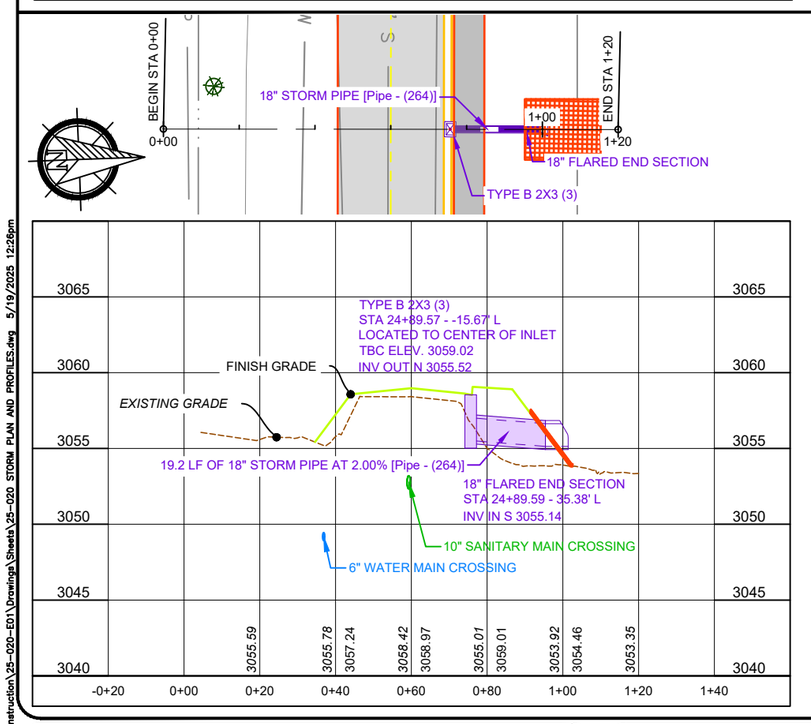
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

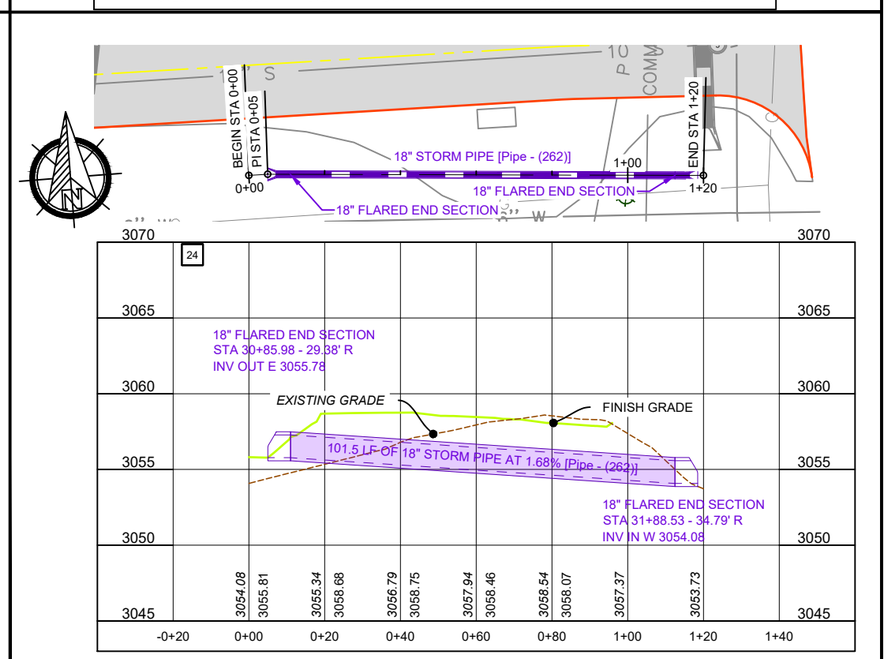
SHEET NAME: **STORM PLAN AND PROFILES - 2 OF 3**

SHEET NO: **27**

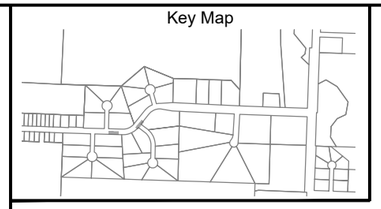








Key Map



PROPERTY OWNERS - SEE TABLE ON SHEET 13

STORM SEWER NOTES			
STATION	OFFSET	INV: ELEV	ITEM DESC
23+05.10	24.00'R	Pipe - (204): 3060.06' - Out	18" NYLOPLAST DRAINAGE STRUCTURE
23+73.92	27.46'R	Pipe - (204): 3057.54' - In	18" FLARED END SECTION
24+89.57	15.67'L	Pipe - (264): 3055.52' - Out	TYPE B 2X3 (3)
24+89.59	35.38'L	Pipe - (264): 3055.14' - In	18" FLARED END SECTION
28+90.84	29.00'R	Pipe - (202): 3058.50' - Out	18" FLARED END SECTION
29+58.52	29.00'R	Pipe - (202): 3057.36' - In	18" FLARED END SECTION
30+85.98	29.38'R	Pipe - (262): 3055.78' - Out	18" FLARED END SECTION
31+88.53	34.79'R	Pipe - (262): 3054.08' - In	18" FLARED END SECTION

NOTE:
ALL STATIONS AND OFFSETS ARE BASED ON THE WEST SUNNY DALE ROAD ALIGNMENT

20' 10' 0 20' 40'
SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 STORM PLAN AND PROFILES.dwg 5/19/2025 12:26pm

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Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder - Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
20250516

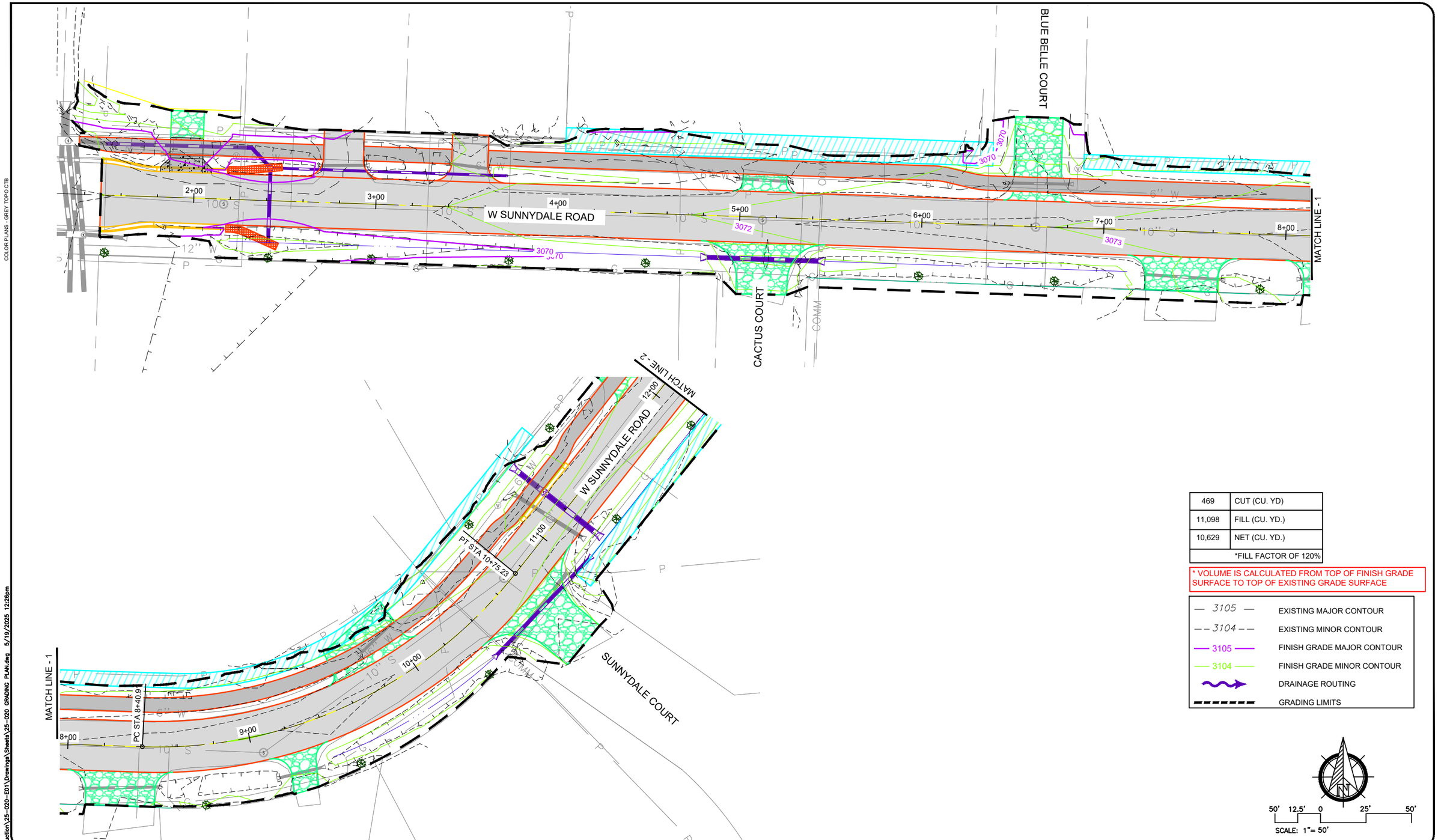
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
STORM PLAN AND PROFILES - 3 OF 3

SHEET NO:
28



469	CUT (CU. YD)
11,098	FILL (CU. YD.)
10,629	NET (CU. YD.)
*FILL FACTOR OF 120%	

* VOLUME IS CALCULATED FROM TOP OF FINISH GRADE SURFACE TO TOP OF EXISTING GRADE SURFACE

3105	EXISTING MAJOR CONTOUR
3104	EXISTING MINOR CONTOUR
3105	FINISH GRADE MAJOR CONTOUR
3104	FINISH GRADE MINOR CONTOUR
	DRAINAGE ROUTING
	GRADING LIMITS

N

50' 12.5' 0 25' 50'

SCALE: 1"= 50'

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
2025.05.16

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
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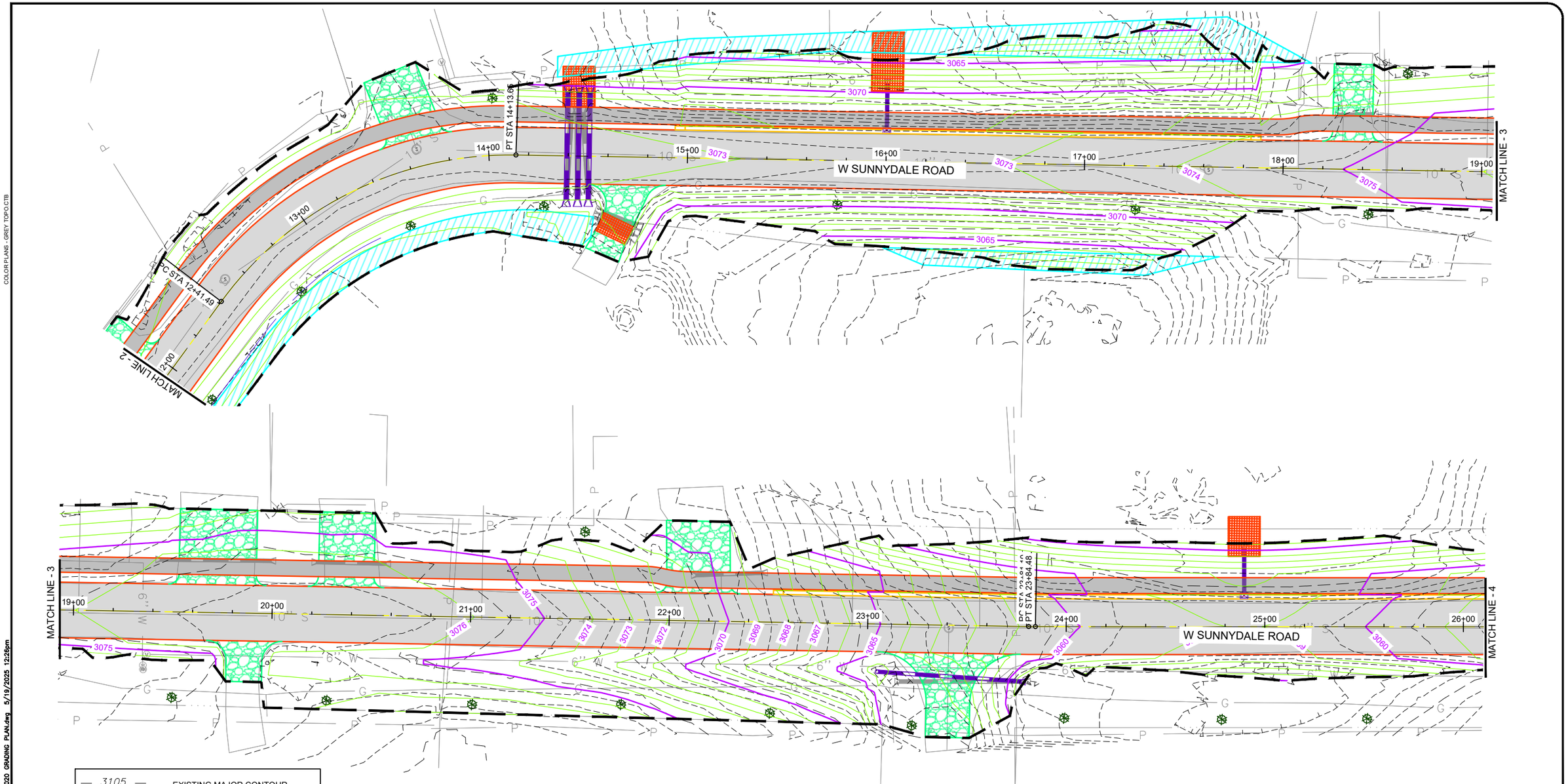
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
GRADING PLAN 1 OF 3

SHEET NO:
29



3105	EXISTING MAJOR CONTOUR
3104	EXISTING MINOR CONTOUR
3105	FINISH GRADE MAJOR CONTOUR
3104	FINISH GRADE MINOR CONTOUR
	DRAINAGE ROUTING
	GRADING LIMITS

469	CUT (CU. YD)
11,098	FILL (CU. YD.)
10,629	NET (CU. YD.)
	*FILL FACTOR OF 120%

* VOLUME IS CALCULATED FROM TOP OF FUTURE GRADE SURFACE TO TOP OF EXISTING GRADE SURFACE

50' 12.5' 0 25' 50'

SCALE: 1"= 50'

TDG

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147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
20250516

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
GRADING PLAN 2 OF 3

SHEET NO:
30

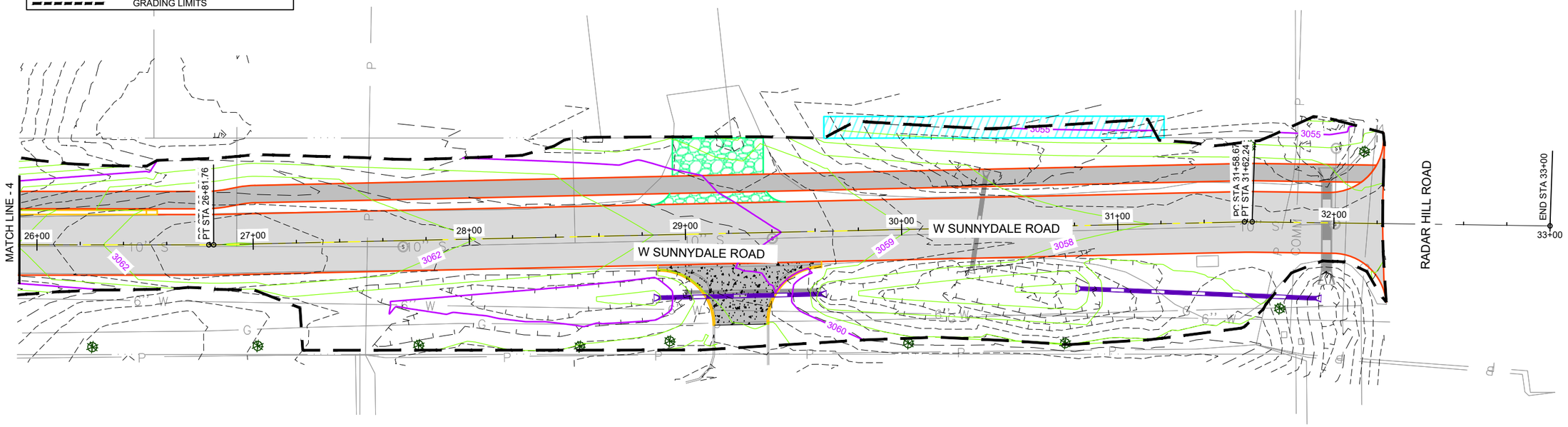
COLOR PLANS - GREY TOPO.CTB

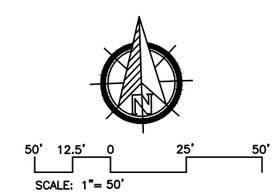
P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 GRADING PLAN.dwg 5/19/2025 12:26pm

469	CUT (CU. YD)
11,098	FILL (CU. YD.)
10,629	NET (CU. YD.)
	*FILL FACTOR OF 120%

* VOLUME IS CALCULATED FROM TOP OF FUTURE GRADE SURFACE TO TOP OF EXISTING GRADE SURFACE

3105	EXISTING MAJOR CONTOUR
3104	EXISTING MINOR CONTOUR
3105	FINISH GRADE MAJOR CONTOUR
3104	FINISH GRADE MINOR CONTOUR
	DRAINAGE ROUTING
	GRADING LIMITS





COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 GRADING PLAN.dwg 5/19/2025 12:26pm

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.19

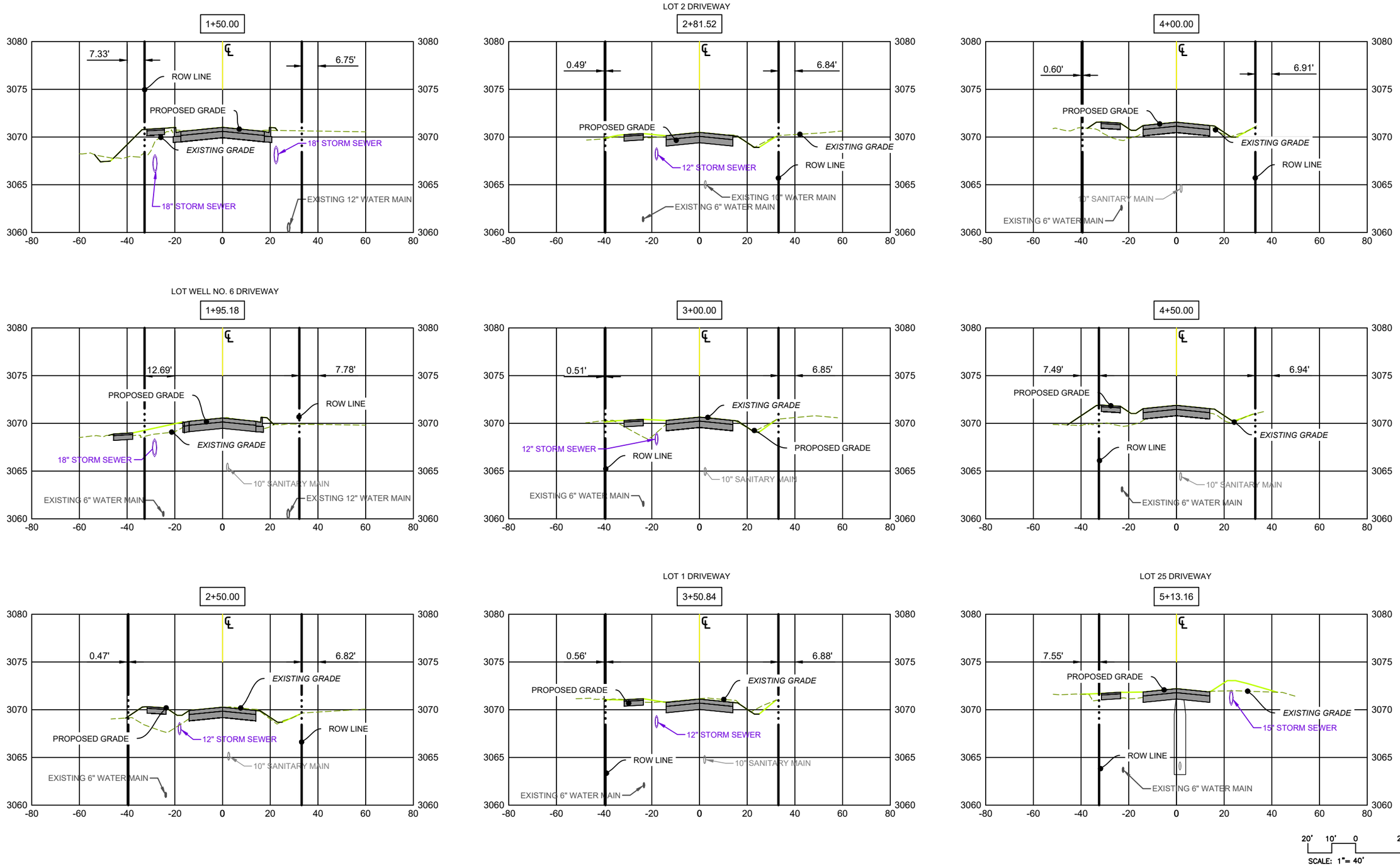
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
GRADING PLAN 3 OF 3

SHEET NO:
31



COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:26pm

TDG

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147 Chisholm Drive
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REGISTERED PROFESSIONAL ENGINEER
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Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

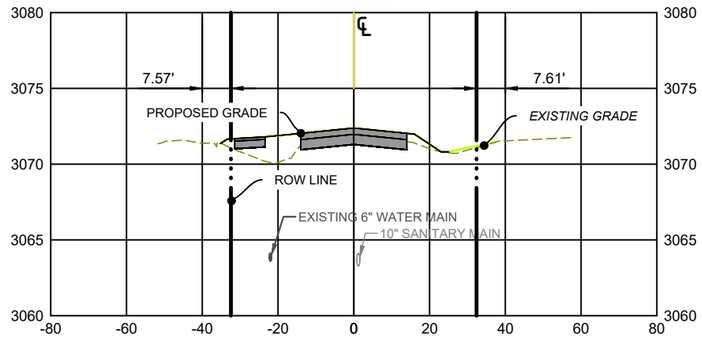
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
CROSS SECTIONS - 1 OF 9

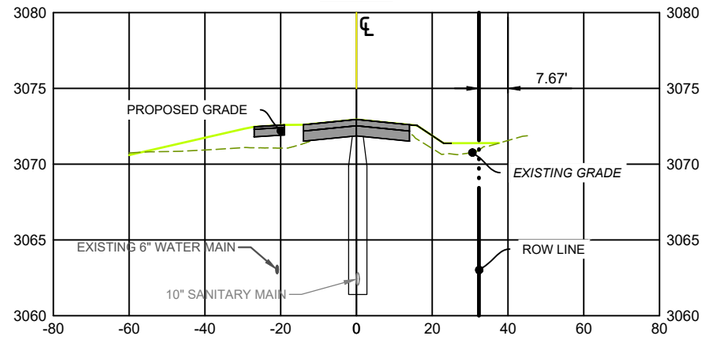
SHEET NO:
32

BLUE BELL COURT

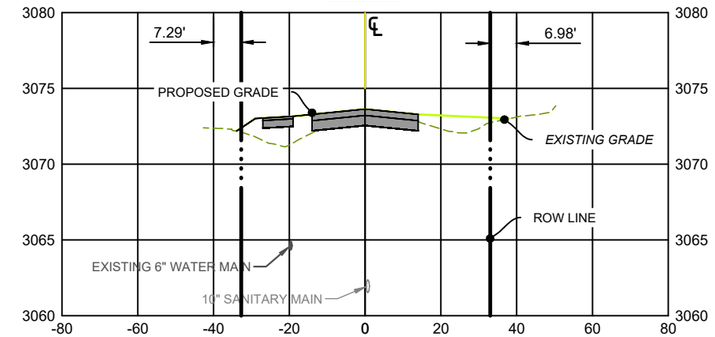
5+50.00



6+62.57



8+00.00



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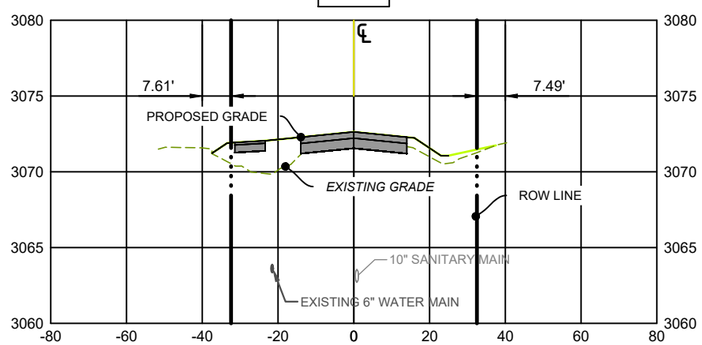
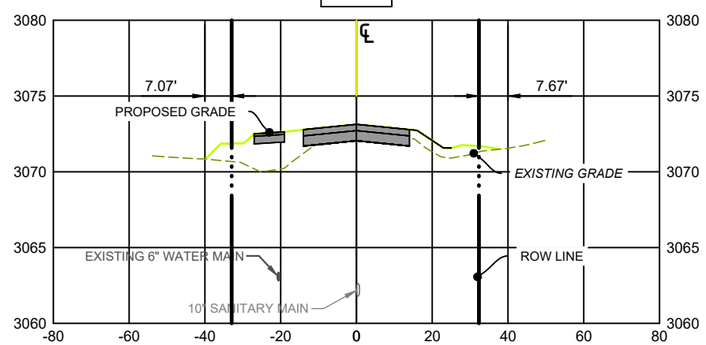
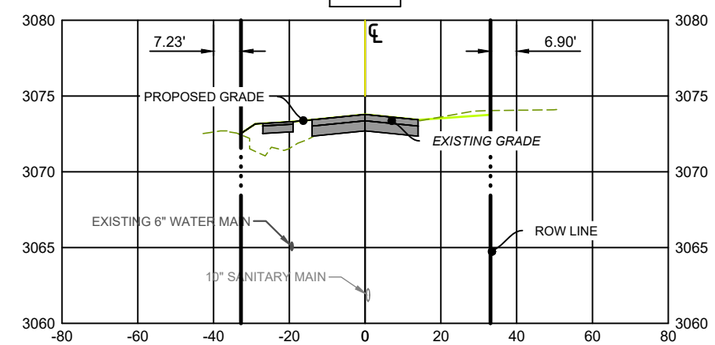


7+00.00



LOT 26 DRIVEWAY (EAST)

8+29.60



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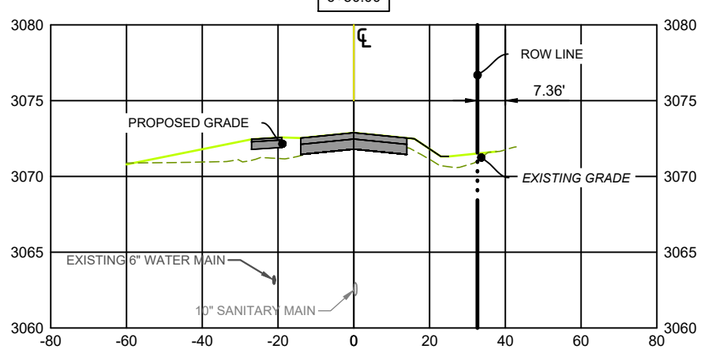
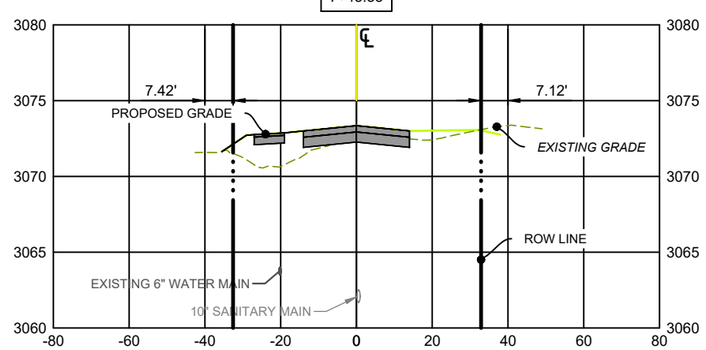
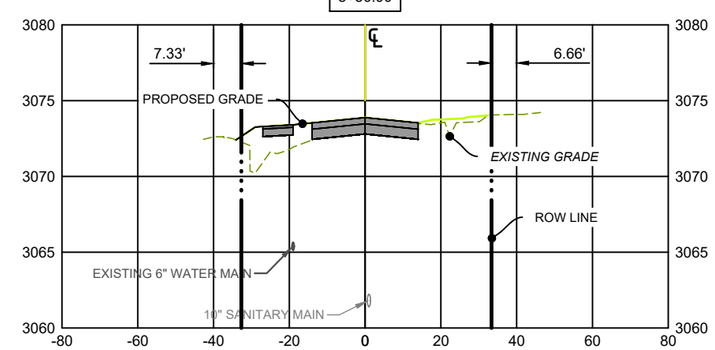


LOT 26 DRIVEWAY (WEST)

7+43.53



8+50.00



20' 10' 0 20' 40'
SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:26pm

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

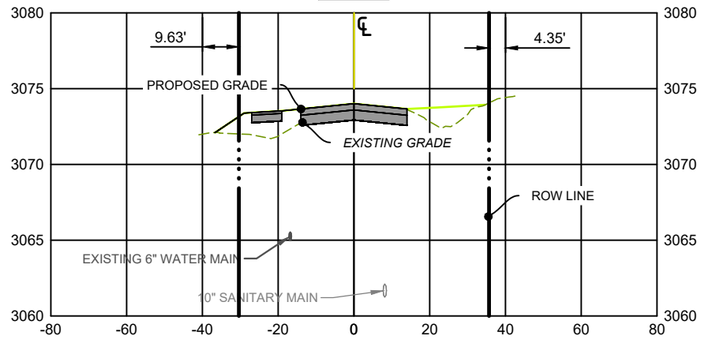
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

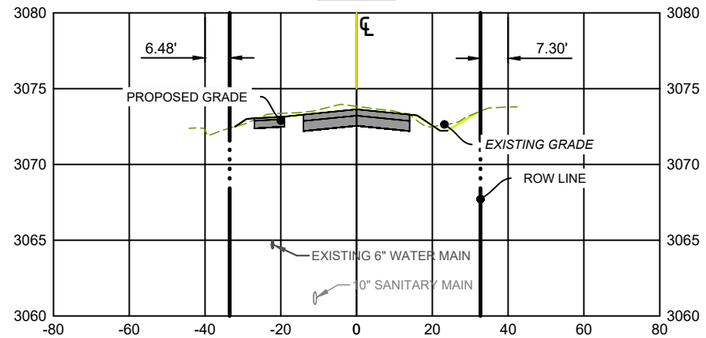
SHEET NAME:
CROSS SECTIONS - 2 OF 9

SHEET NO:
33

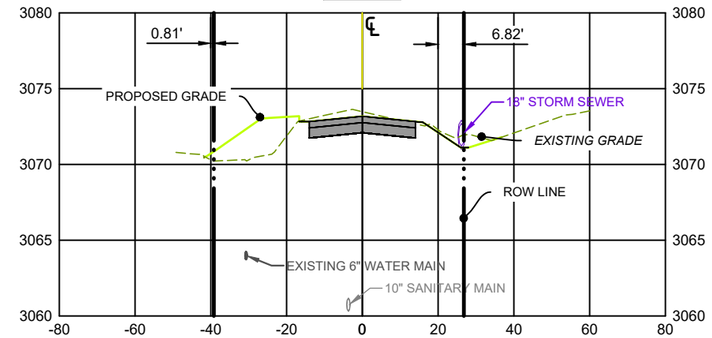
9+00.00



10+00.00

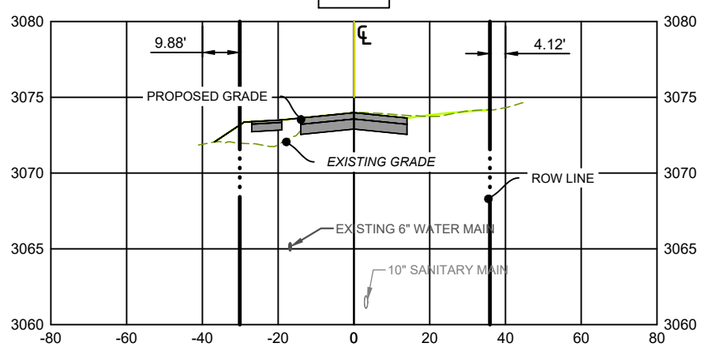


11+00.00



LOT 20 DRIVEWAY

9+22.02



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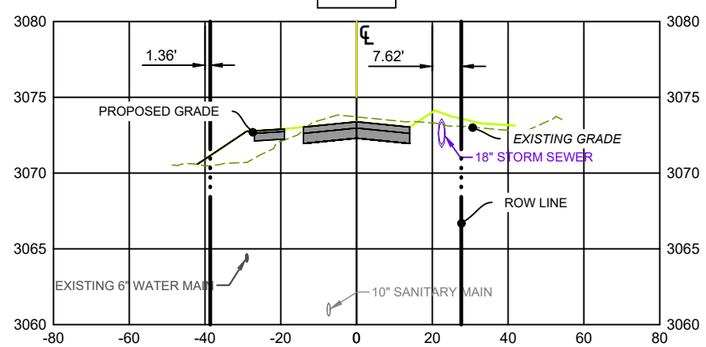

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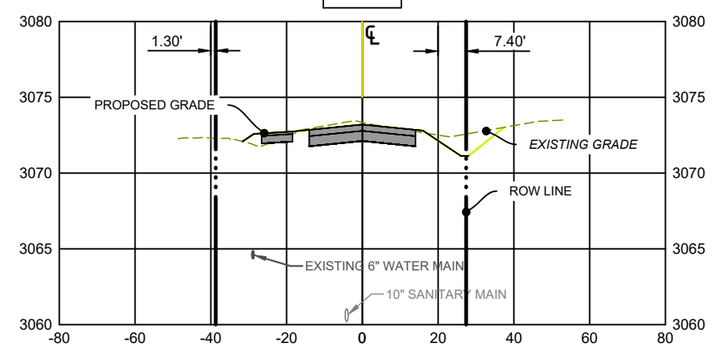

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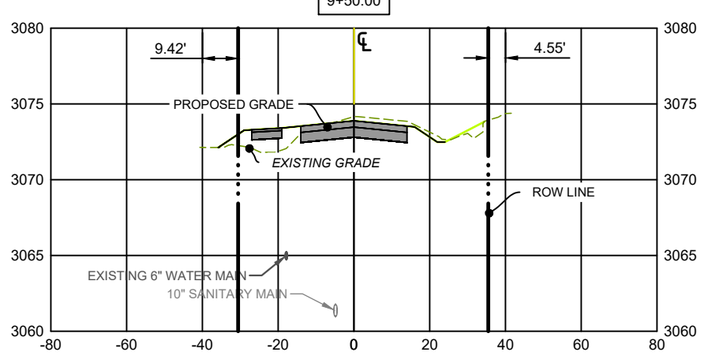
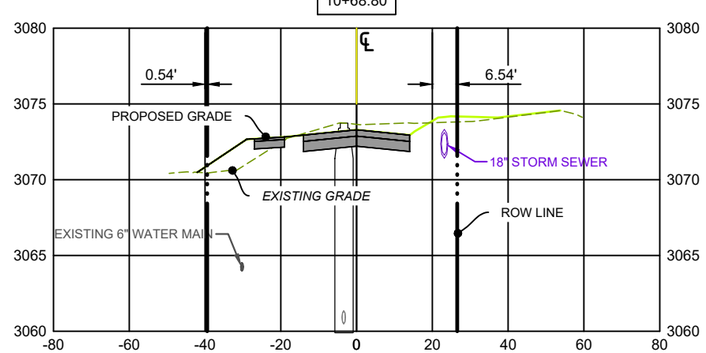


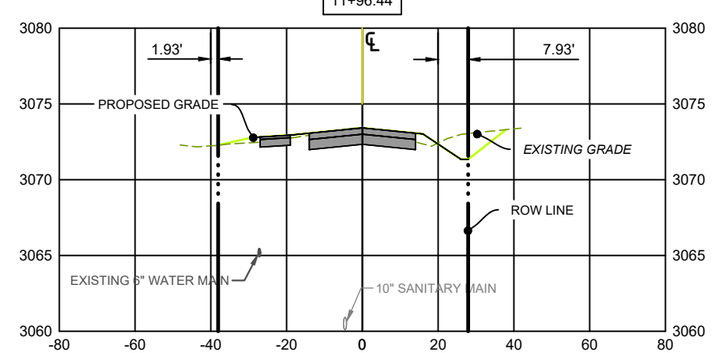
CROCUS COURT

10+68.80



LOT 12 DRIVEWAY

11+96.44



20' 10' 0 20' 40'

SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:28pm

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

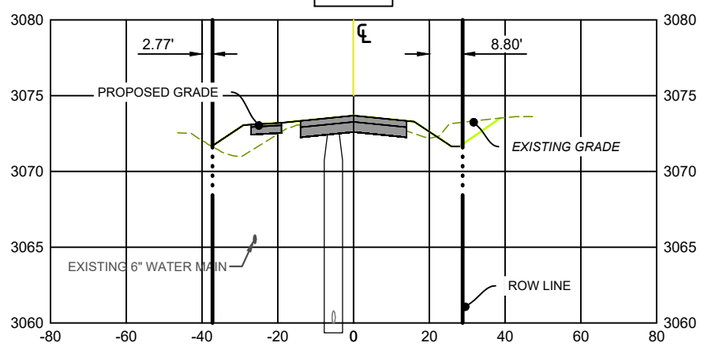
SHEET NAME:
CROSS SECTIONS - 3 OF 9

SHEET NO:
34

SUNFLOWER COURT

LOT 12 DRIVEWAY

12+50.00



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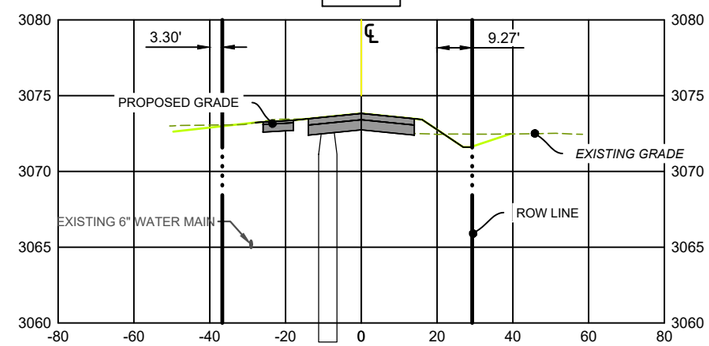

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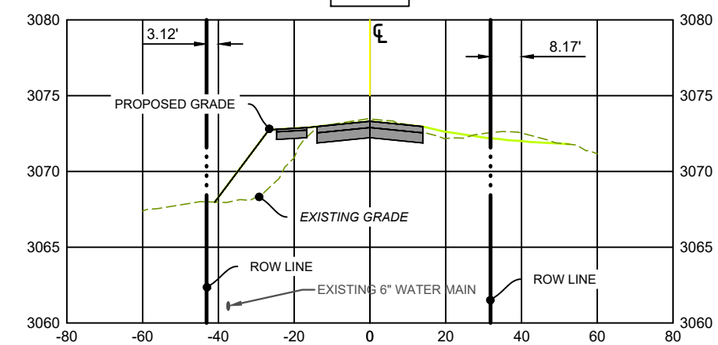

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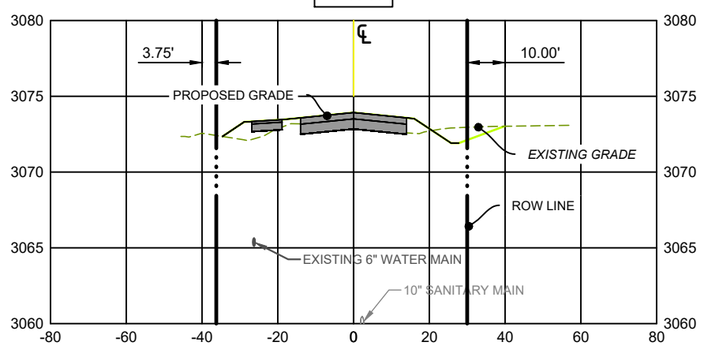

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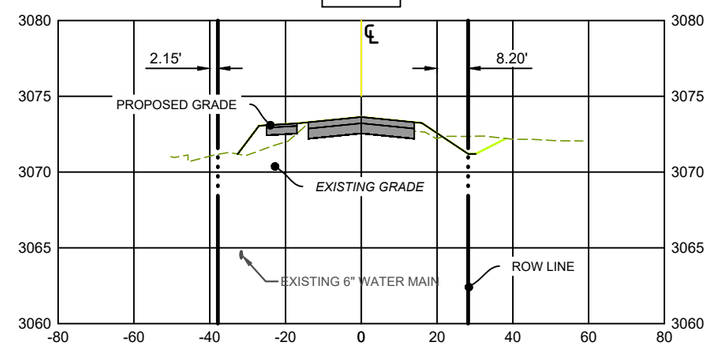
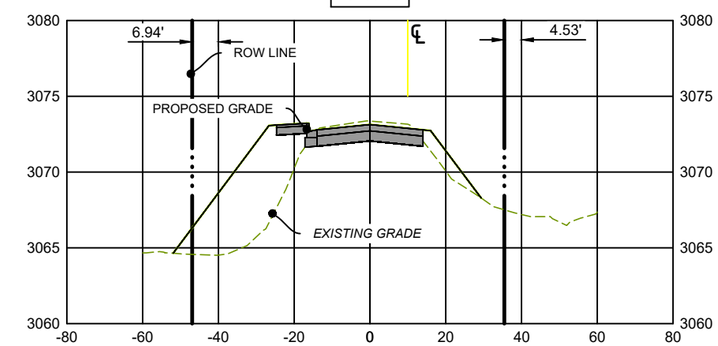


15+00.00



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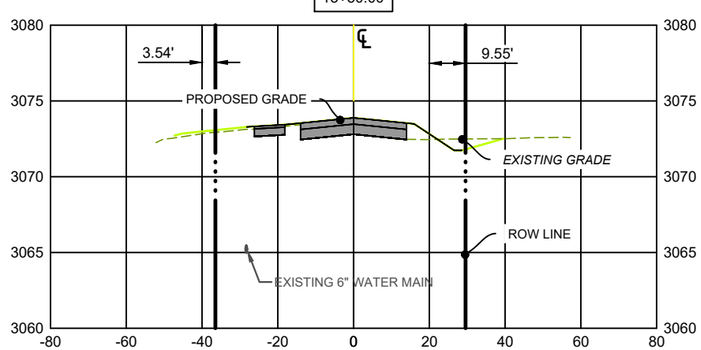

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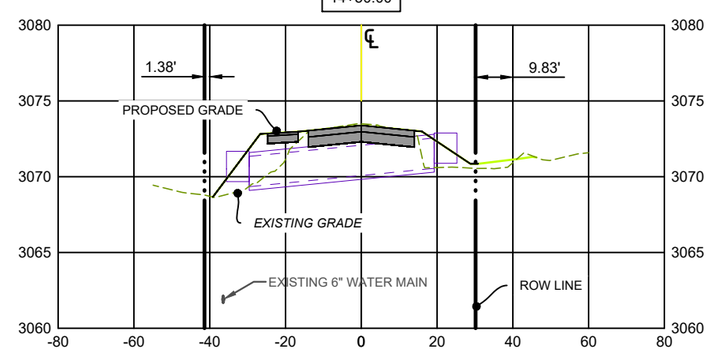

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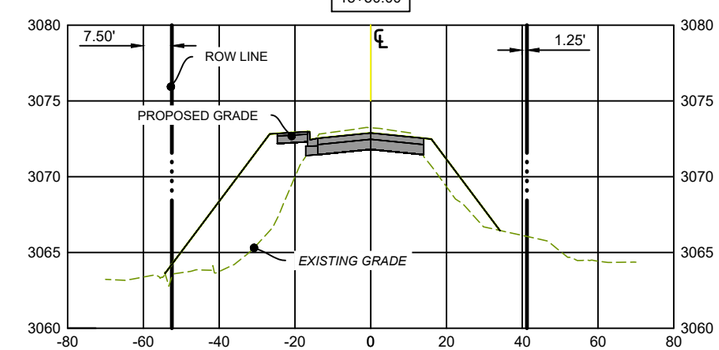


20' 10' 0 20' 40'

SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:26pm

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

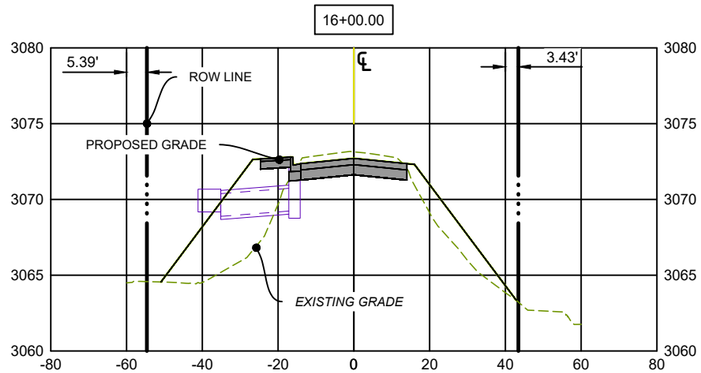
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

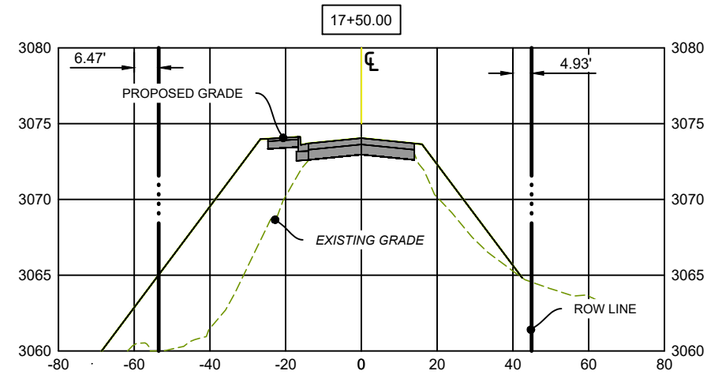
REVISIONS:

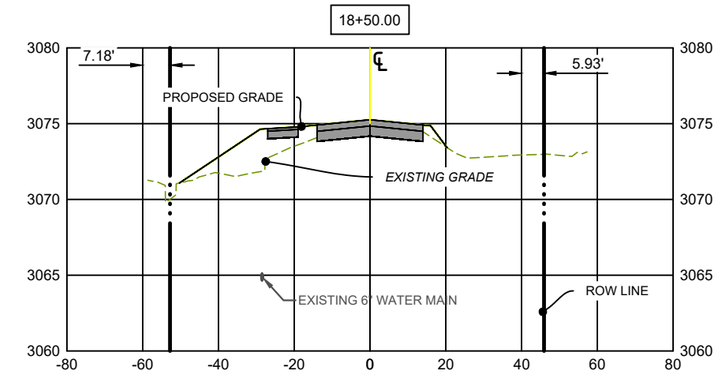
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

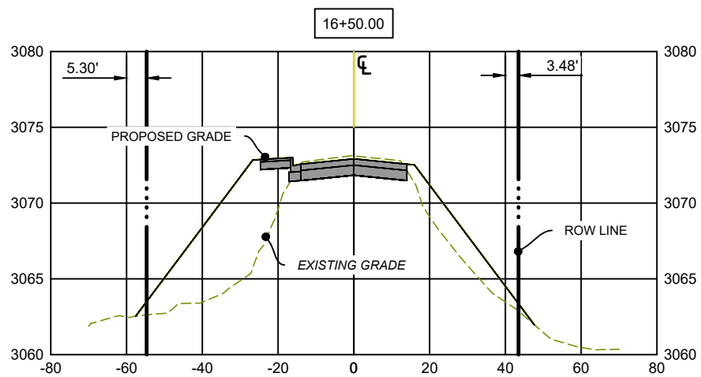
SHEET NAME:
CROSS SECTIONS - 4 OF 9

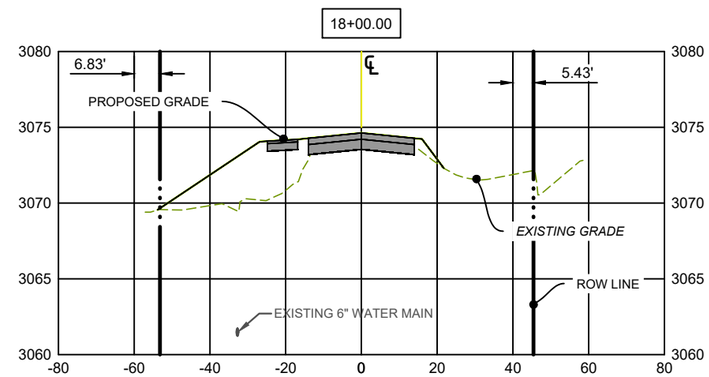
SHEET NO:
35

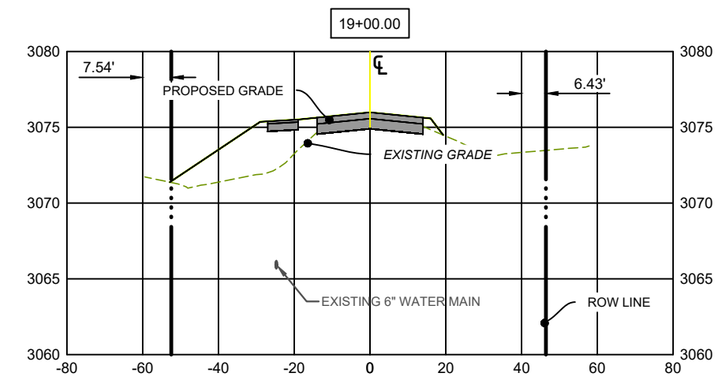


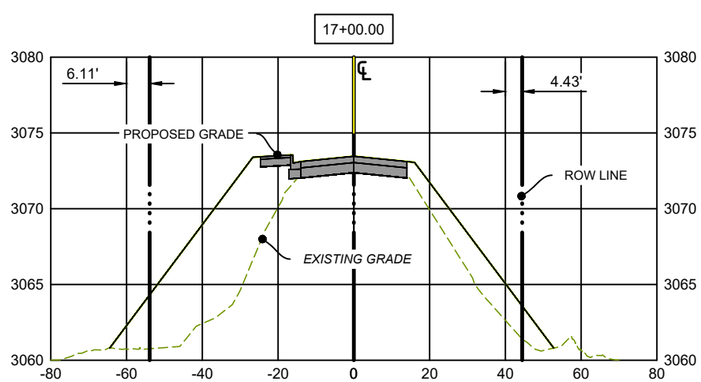




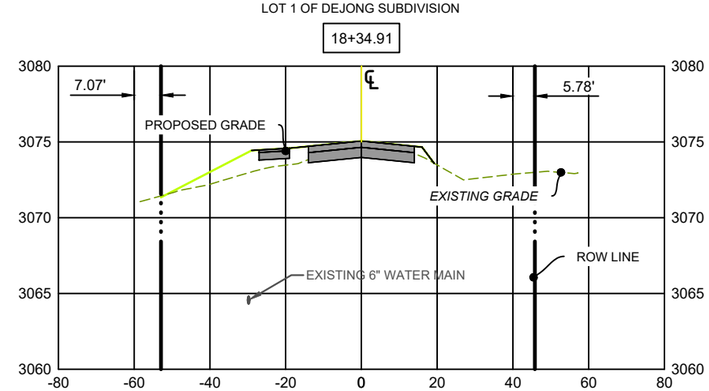


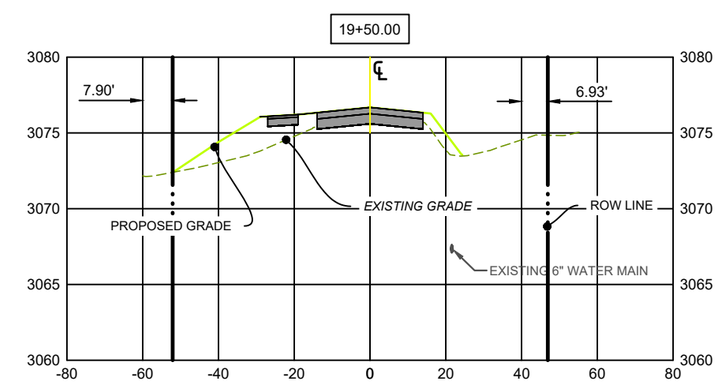






LOT 1 OF DEJONG SUBDIVISION





20' 10' 0 20' 40'
SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:26pm

TDG

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LOGO:

REGISTERED PROFESSIONAL ENGINEER
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Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

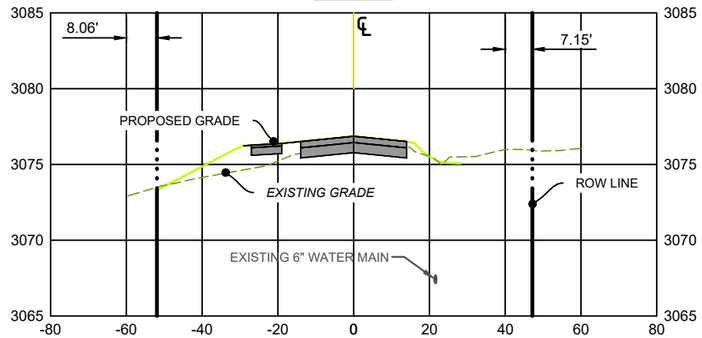
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
CROSS SECTIONS - 5 OF 9

SHEET NO:
36

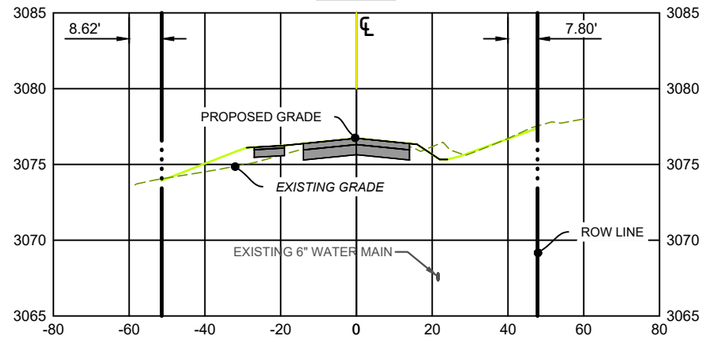
LOT 2 OF DEJONG SUBDIVISION

19+72.43

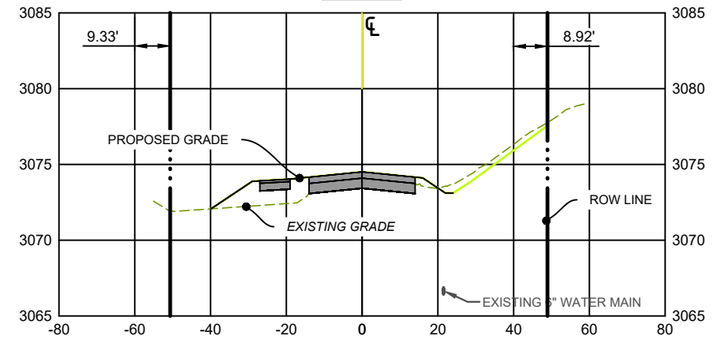


LOT 3 OF DEJONG SUBDIVISION

20+37.24

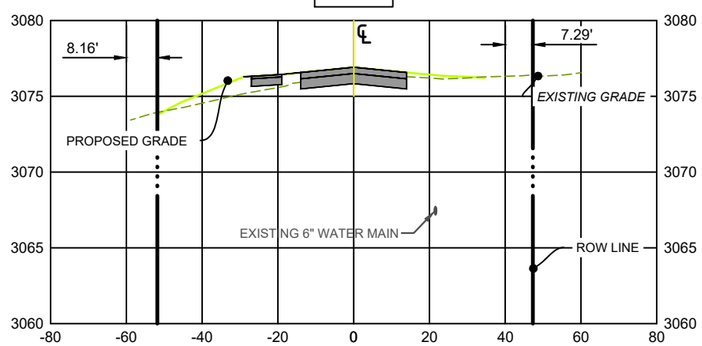


21+50.00

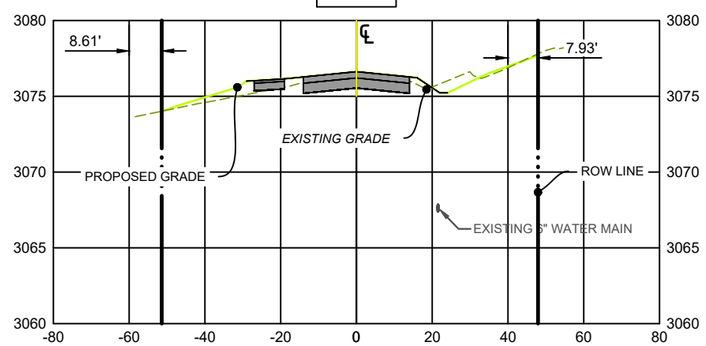


LOT 6B OF LOT 6

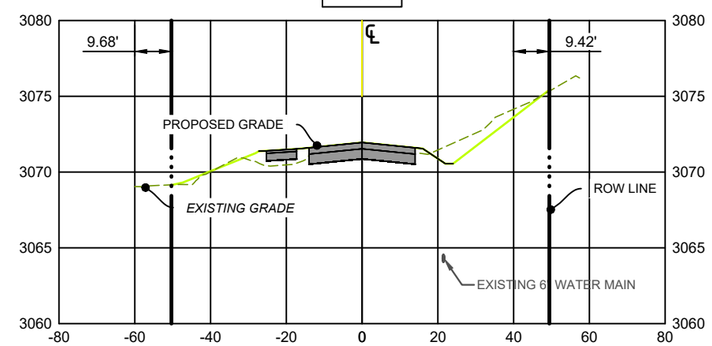
19+86.19



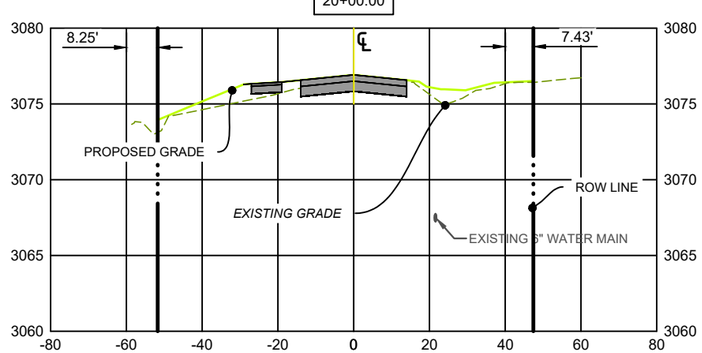
20+50.00



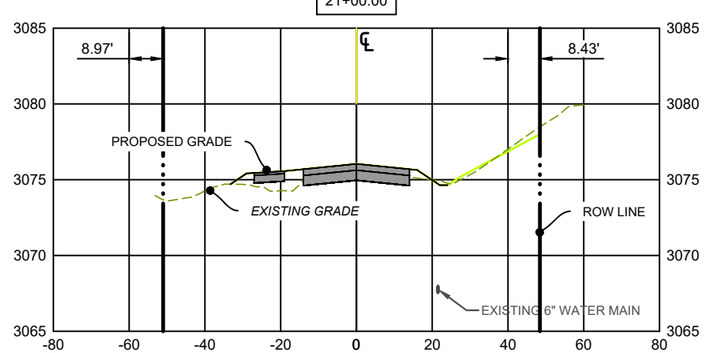
22+00.00



20+00.00

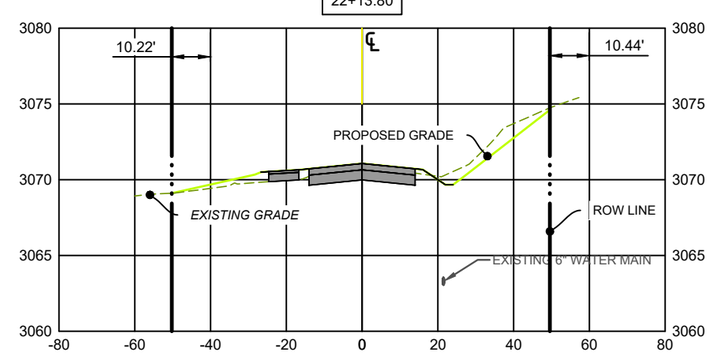


21+00.00



LOT 4 DRIVEWAY

22+13.80



20' 10' 0 20' 40'

SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:28pm

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

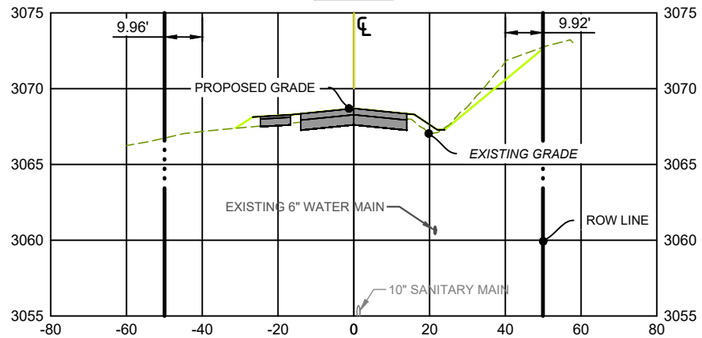
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
CROSS SECTIONS - 6 OF 9

SHEET NO:
37

SUNNYDALE COURT

22+50.00



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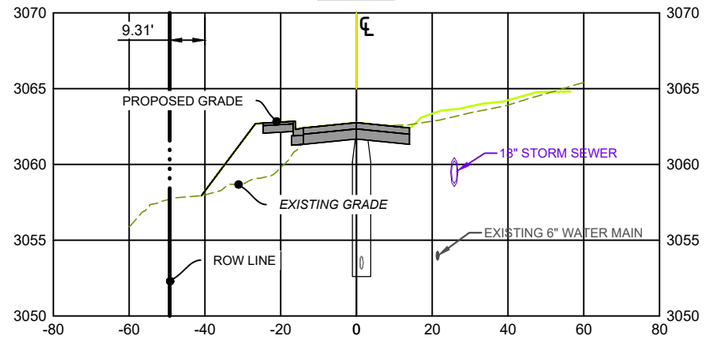

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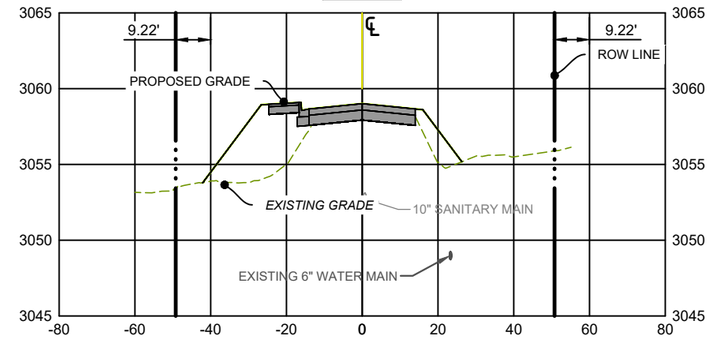

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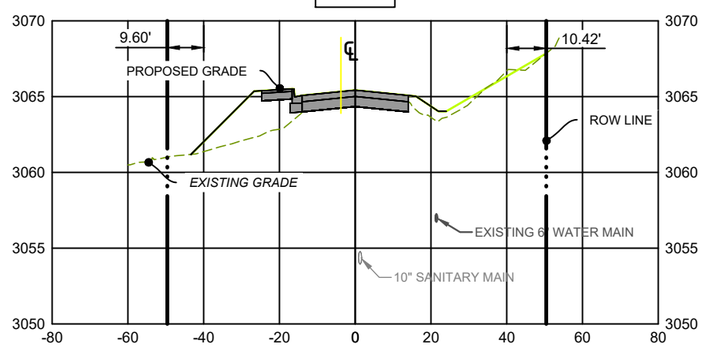

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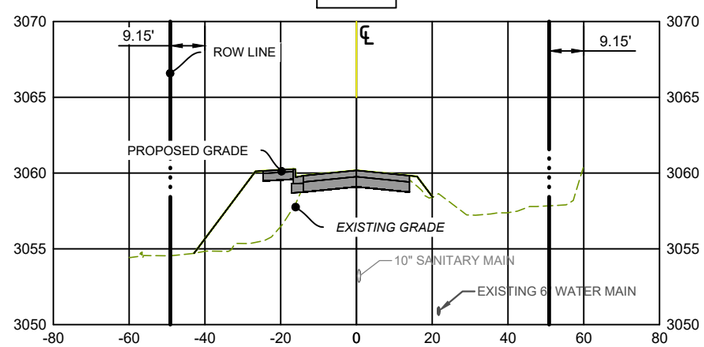

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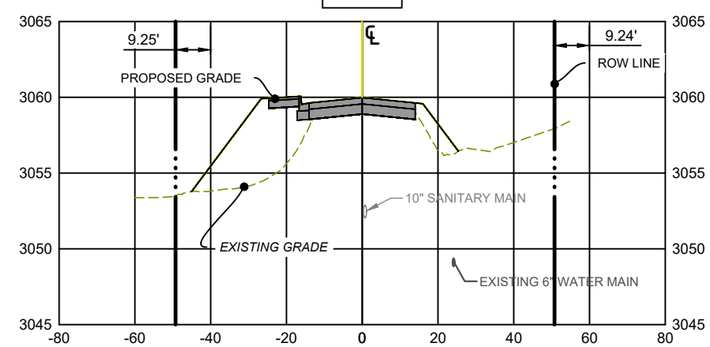

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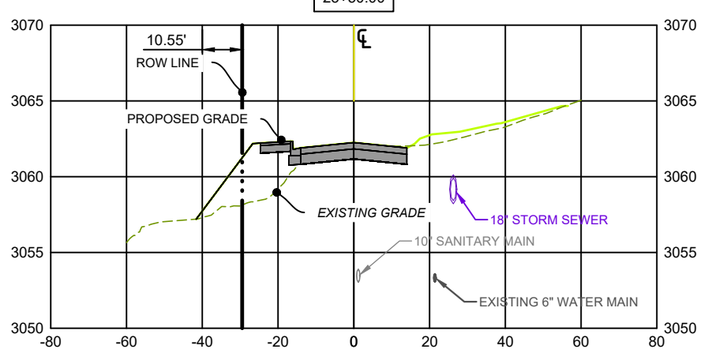

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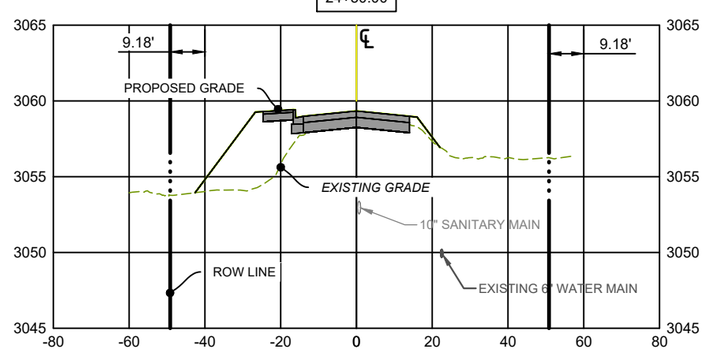

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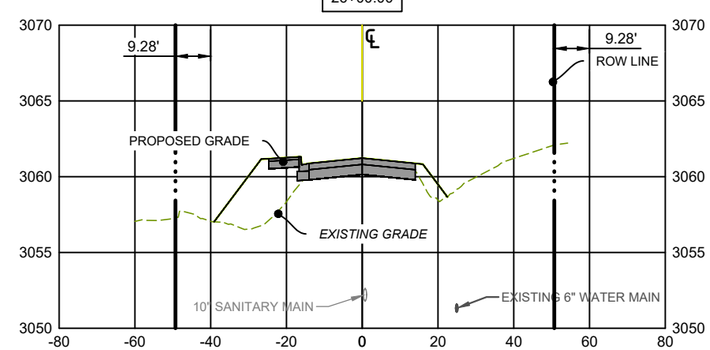


20' 10' 0 20' 40'
SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:27pm

TDG

Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

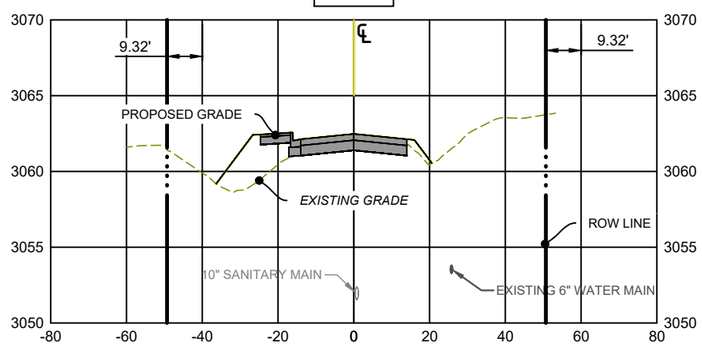
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
CROSS SECTIONS - 7 OF 9

SHEET NO:
38

26+50.00



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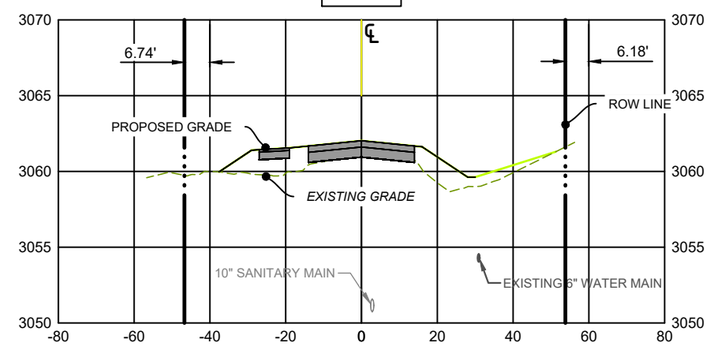
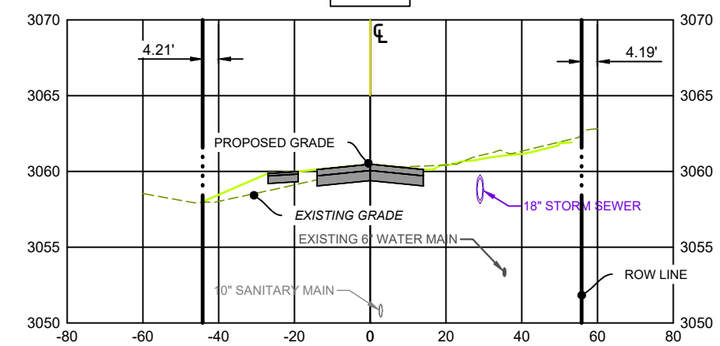


TRACT 1AR LOCATED IN SEC 24
AND SEC 25

29+15.95



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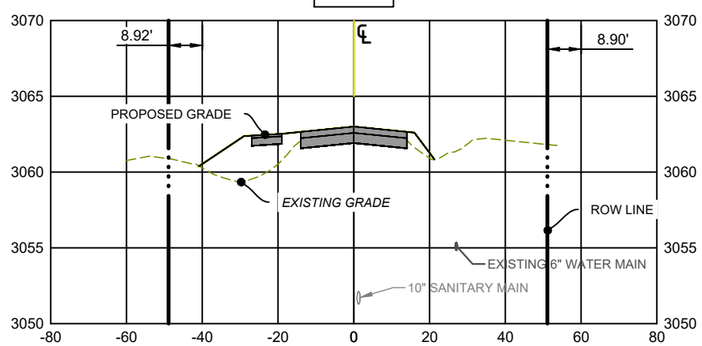

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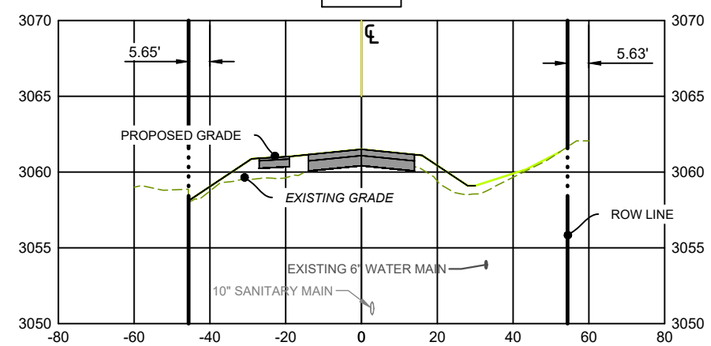
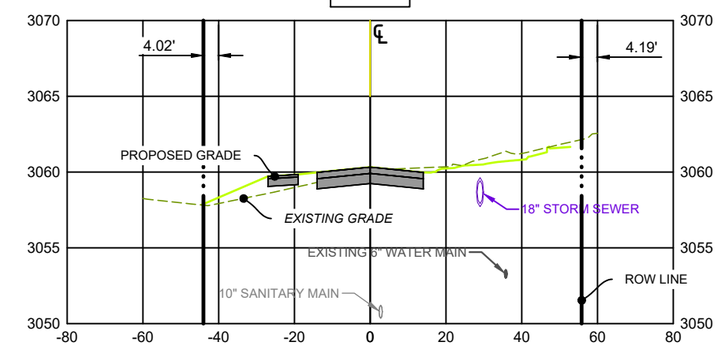


THAT PT OF TRACT A-101 REFERRED TO AS THE SEWAGE
LAGOON DESCRIBED BY METES AND BOUNDS PER DEED IN
BOOK 107 PAGE 6326 LESS LOT H1 AND LESS ROW

29+24.74



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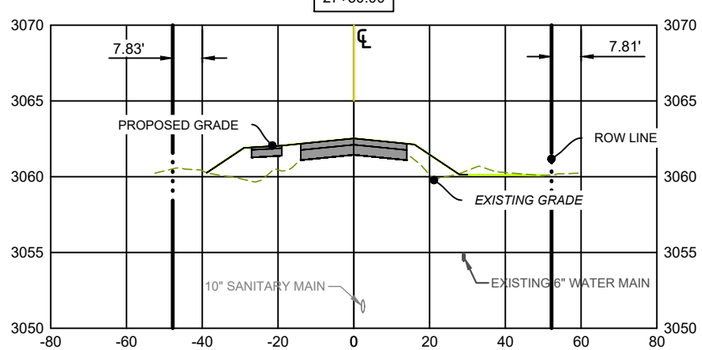

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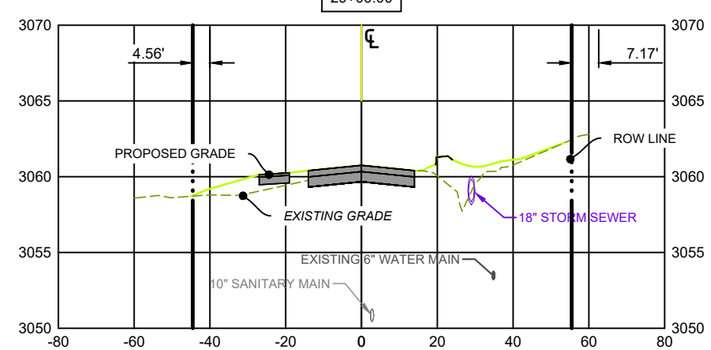

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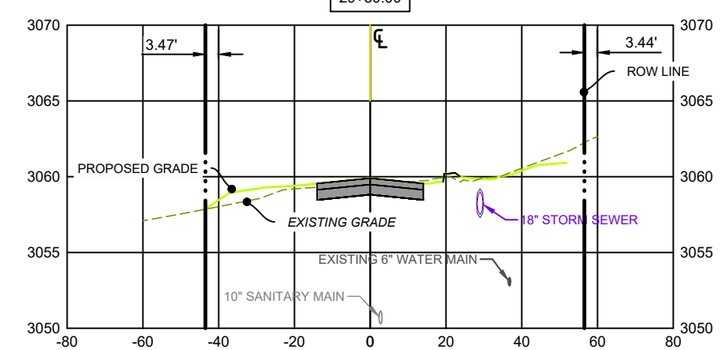


20' 10' 0 20' 40'
SCALE: 1"= 40'

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 CROSS SECTIONS.dwg 5/19/2025 12:27pm

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

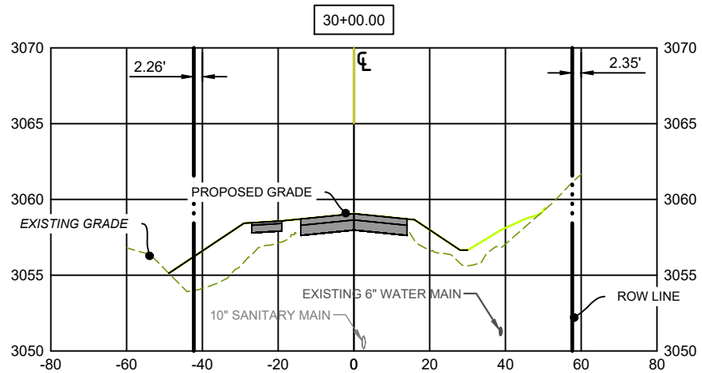
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

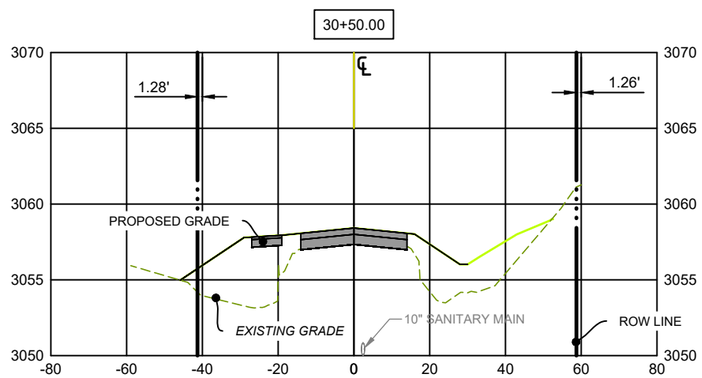
REVISIONS:

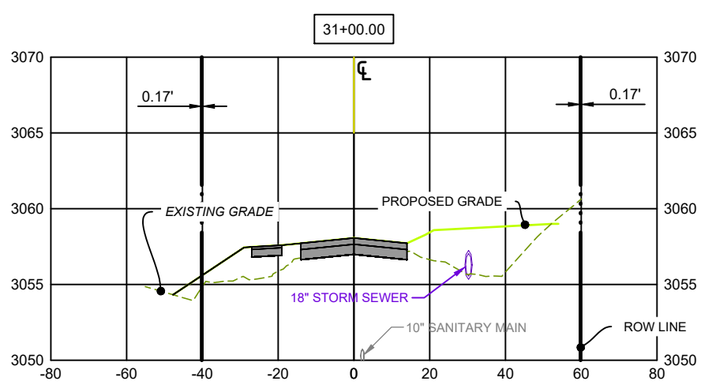
JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
CROSS SECTIONS - 8 OF 9

SHEET NO:
39







20' 10' 0 20' 40'
SCALE: 1"= 40'

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Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
NORTH DAKOTA
2025-05-19

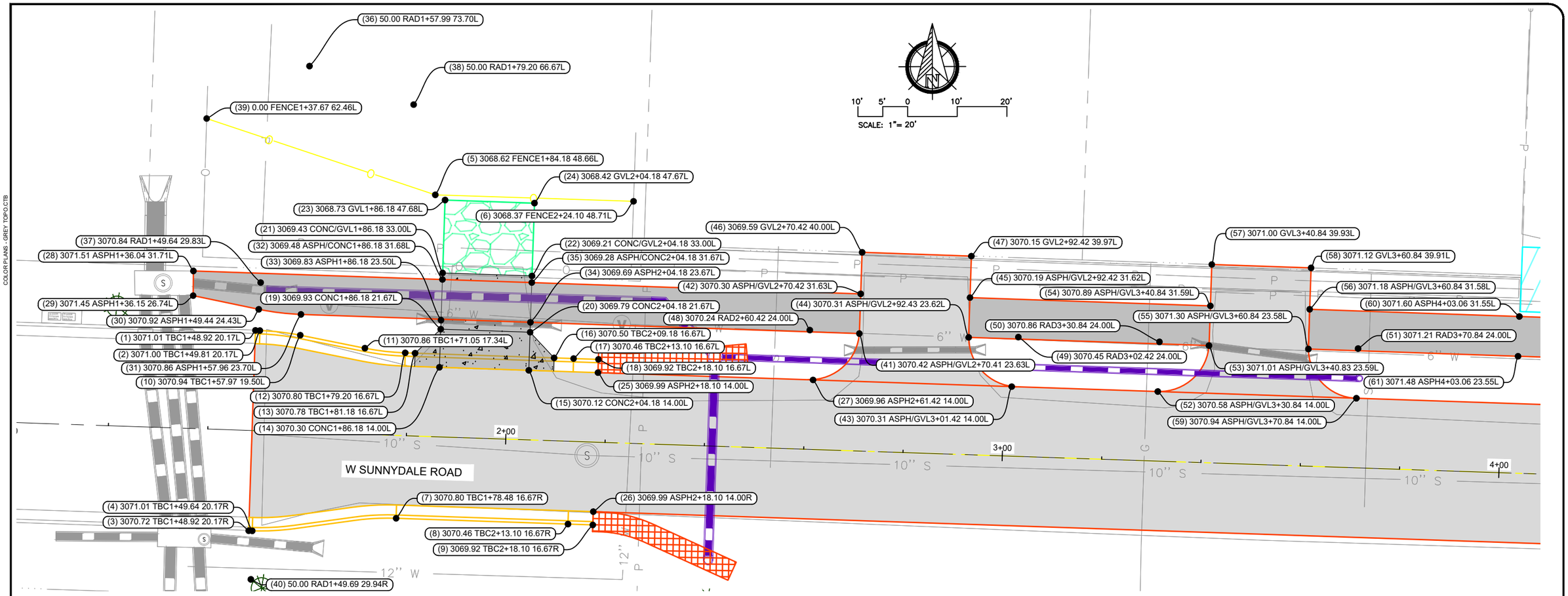
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
CROSS SECTIONS - 9 OF 9

SHEET NO:
40



COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
1	658848.88	1241412.76	3071.01	TBC1+48.92 20.17L
2	658848.85	1241413.66	3071.00	TBC1+49.81 20.17L
3	658808.56	1241411.40	3070.72	TBC1+48.92 20.17R
4	658808.54	1241412.12	3071.01	TBC1+49.64 20.17R
5	658876.17	1241448.96	3068.62	FENCE1+84.18 48.66L
6	658874.86	1241488.86	3068.37	FENCE2+24.10 48.71L
7	658811.06	1241441.07	3070.80	TBC1+78.48 16.67R
8	658809.90	1241475.66	3070.46	TBC2+13.10 16.67R
9	658809.73	1241480.66	3069.92	TBC2+18.10 16.67R
10	658847.91	1241421.78	3070.94	TBC1+57.97 19.50L
11	658845.30	1241434.79	3070.86	TBC1+71.05 17.34L
12	658844.36	1241442.91	3070.80	TBC1+79.20 16.67L
13	658844.29	1241444.88	3070.78	TBC1+81.18 16.67L
14	658841.46	1241449.79	3070.30	CONC1+86.18 14.00L
15	658840.85	1241467.78	3070.12	CONC2+04.18 14.00L
16	658843.35	1241472.87	3070.50	TBC2+09.18 16.67L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
17	658843.22	1241476.79	3070.46	TBC2+13.10 16.67L
18	658843.05	1241481.78	3069.92	TBC2+18.10 16.67L
19	658849.12	1241450.05	3069.93	CONC1+86.18 21.67L
20	658848.52	1241468.04	3069.79	CONC2+04.18 21.67L
21	658860.45	1241450.43	3069.43	CONC/GVL1+86.18 33.00L
22	658859.84	1241468.42	3069.21	CONC/GVL2+04.18 33.00L
23	658875.12	1241450.93	3068.73	GVL1+86.18 47.68L
24	658874.50	1241468.92	3068.42	GVL2+04.18 47.67L
25	658840.38	1241481.69	3069.99	ASPH2+18.10 14.00L
26	658812.40	1241480.75	3069.99	ASPH2+18.10 14.00R
27	658838.92	1241524.99	3069.96	ASPH2+61.42 14.00L
28	658860.85	1241400.28	3071.51	ASPH1+36.04 31.71L
29	658855.88	1241400.22	3071.45	ASPH1+36.15 26.74L
30	658853.13	1241413.43	3070.92	ASPH1+49.44 24.43L
31	658852.10	1241421.92	3070.86	ASPH1+57.96 23.70L
32	658859.13	1241450.39	3069.48	ASPH/CONC1+86.18 31.68L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
33	658850.95	1241450.11	3069.83	ASPH1+86.18 23.50L
34	658850.52	1241468.11	3069.69	ASPH2+04.18 23.67L
35	658858.51	1241468.38	3069.28	ASPH/CONC2+04.18 31.67L
36	658902.07	1241423.64	50.00	RAD1+57.99 73.70L
37	658858.51	1241413.80	3070.84	RAD1+49.64 29.83L
38	658894.33	1241444.60	50.00	RAD1+79.20 66.67L
39	658891.52	1241402.94	0.00	FENCE1+37.67 62.46L
40	658798.77	1241411.84	50.00	RAD1+49.69 29.94R
41	658848.24	1241534.30	3070.42	ASPH/GVL2+70.41 23.63L
42	658856.24	1241534.58	3070.30	ASPH/GVL2+70.42 31.63L
43	658837.57	1241564.97	3070.31	ASPH/GVL3+01.42 14.00L
44	658847.48	1241556.31	3070.31	ASPH/GVL2+92.43 23.62L
45	658855.48	1241556.57	3070.19	ASPH/GVL2+92.42 31.62L
46	658864.59	1241534.86	3069.59	GVL2+70.42 40.00L
47	658863.83	1241556.85	3070.15	GVL2+92.42 39.97L
48	658848.95	1241524.33	3070.24	RAD2+60.42 24.00L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
49	658847.53	1241566.31	3070.45	RAD3+02.42 24.00L
50	658846.57	1241594.70	3070.86	RAD3+30.84 24.00L
51	658845.22	1241634.68	3071.21	RAD3+70.84 24.00L
52	658836.58	1241594.37	3070.58	ASPH/GVL3+30.84 14.00L
53	658845.82	1241604.68	3071.01	ASPH/GVL3+40.83 23.59L
54	658853.82	1241604.95	3070.89	ASPH/GVL3+40.84 31.59L
55	658845.14	1241624.68	3071.30	ASPH/GVL3+60.84 23.58L
56	658853.13	1241624.94	3071.18	ASPH/GVL3+60.84 31.58L
57	658862.15	1241605.24	3071.00	GVL3+40.84 39.93L
58	658861.46	1241625.22	3071.12	GVL3+60.84 39.91L
59	658835.23	1241634.34	3070.94	ASPH/GVL3+70.84 14.00L
60	658851.68	1241667.14	3071.60	ASPH4+03.06 31.55L
61	658843.69	1241666.87	3071.48	ASPH4+03.06 23.55L

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

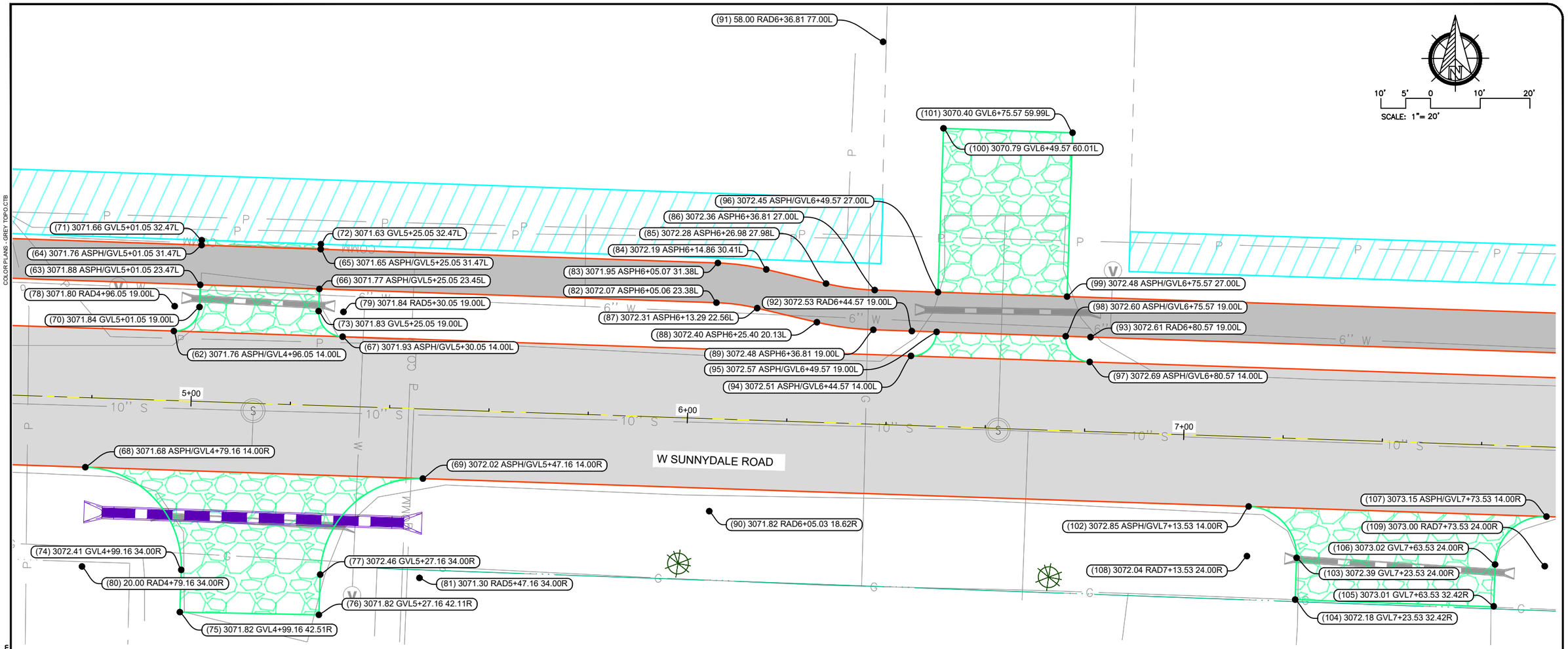
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
POINTS PLAN 1 OF 7

SHEET NO:
41



COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
62	658831.00	1241759.49	3071.76	ASPH/GVL4+96.05 14.00L
63	658840.30	1241764.80	3071.88	ASPH/GVL5+01.05 23.47L
64	658848.29	1241765.08	3071.76	ASPH/GVL5+01.05 31.47L
65	658847.48	1241789.06	3071.65	ASPH/GVL5+25.05 31.47L
66	658839.47	1241788.79	3071.77	ASPH/GVL5+25.05 23.45L
67	658829.85	1241793.47	3071.93	ASPH/GVL5+30.05 14.00L
68	658803.59	1241741.66	3071.68	ASPH/GVL4+79.16 14.00R
69	658801.29	1241809.63	3072.02	ASPH/GVL5+47.16 14.00R
70	658835.83	1241764.66	3071.84	GVL5+01.05 19.00L
71	658849.29	1241765.11	3071.66	GVL5+01.05 32.47L
72	658848.48	1241789.10	3071.63	GVL5+25.05 32.47L
73	658835.02	1241788.64	3071.83	GVL5+25.05 19.00L
74	658782.92	1241760.98	3072.41	GVL4+99.16 34.00R

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
75	658774.41	1241760.69	3071.82	GVL4+99.16 42.51R
76	658773.87	1241788.69	3071.82	GVL5+27.16 42.11R
77	658781.98	1241788.96	3072.46	GVL5+27.16 34.00R
78	658836.00	1241759.66	3071.80	RAD4+96.05 19.00L
79	658834.85	1241793.64	3071.84	RAD5+30.05 19.00L
80	658783.60	1241740.99	20.00	RAD4+79.16 34.00R
81	658781.30	1241808.95	3071.30	RAD5+47.16 34.00R
82	658836.70	1241868.75	3072.07	ASPH6+05.06 23.38L
83	658844.70	1241869.03	3071.95	ASPH6+05.07 31.38L
84	658843.39	1241878.78	3072.19	ASPH6+14.86 30.41L
85	658840.55	1241890.81	3072.28	ASPH6+26.98 27.98L
86	658839.24	1241900.61	3072.36	ASPH6+36.81 27.00L
87	658835.60	1241876.95	3072.31	ASPH6+13.29 22.56L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
88	658832.76	1241888.97	3072.40	ASPH6+25.40 20.13L
89	658831.25	1241900.34	3072.48	ASPH6+36.81 19.00L
90	658794.73	1241867.30	3071.82	RAD6+05.03 18.62R
91	658889.21	1241902.29	58.00	RAD6+36.81 77.00L
92	658830.99	1241908.09	3072.53	RAD6+44.57 19.00L
93	658829.77	1241944.07	3072.61	RAD6+80.57 19.00L
94	658825.99	1241907.92	3072.51	ASPH/GVL6+44.57 14.00L
95	658830.82	1241913.09	3072.57	ASPH/GVL6+49.57 19.00L
96	658838.81	1241913.36	3072.45	ASPH/GVL6+49.57 27.00L
97	658824.77	1241943.90	3072.69	ASPH/GVL6+80.57 14.00L
98	658829.94	1241939.07	3072.60	ASPH/GVL6+75.57 19.00L
99	658837.93	1241939.34	3072.48	ASPH/GVL6+75.57 27.00L
100	658871.80	1241914.47	3070.79	GVL6+49.57 60.01L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
101	658870.91	1241940.45	3070.40	GVL6+75.57 59.99L
102	658795.68	1241975.90	3072.85	ASPH/GVL7+13.53 14.00R
103	658785.34	1241985.56	3072.39	GVL7+23.53 24.00R
104	658776.93	1241985.27	3072.18	GVL7+23.53 32.42R
105	658775.58	1242025.25	3073.01	GVL7+63.53 32.42R
106	658783.99	1242025.54	3073.02	GVL7+63.53 24.00R
107	658793.65	1242035.87	3073.15	ASPH/GVL7+73.53 14.00R
108	658785.68	1241975.56	3072.04	RAD7+13.53 24.00R
109	658783.66	1242035.53	3073.00	RAD7+73.53 24.00R

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

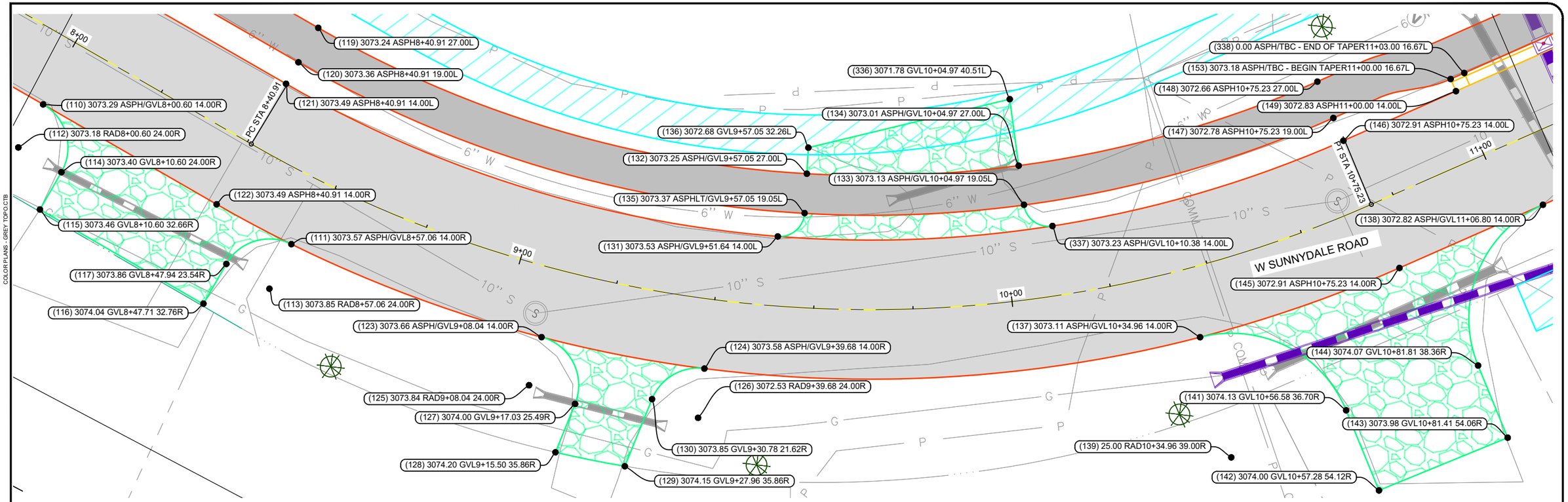
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
POINTS PLAN 2 OF 7

SHEET NO:
42



COLOR PLANS - GREY TOPO.CTB

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
110	658792.74	1242062.92	3073.29	ASPH/GVL8+00.60 14.00R
111	658791.35	1242120.26	3073.57	ASPH/GVL8+57.06 14.00R
112	658782.74	1242062.58	3073.18	RAD8+00.60 24.00R
113	658781.36	1242120.57	3073.85	RAD8+57.06 24.00R
114	658782.41	1242072.57	3073.40	GVL8+10.60 24.00R
115	658773.75	1242072.28	3073.46	GVL8+10.60 32.66R
116	658772.47	1242110.26	3074.04	GVL8+47.71 32.76R
117	658781.70	1242110.57	3073.86	GVL8+47.94 23.54R
118	659055.23	1242112.11	223.00	RAD8+40.91 250.00L
119	658832.35	1242104.59	3073.24	ASPH8+40.91 27.00L
120	658824.36	1242104.32	3073.36	ASPH8+40.91 19.00L
121	658819.36	1242104.15	3073.49	ASPH8+40.91 14.00L
122	658791.38	1242103.20	3073.49	ASPH8+40.91 14.00R
123	658798.47	1242173.52	3073.66	ASPH/GVL9+08.04 14.00R
124	658808.28	1242205.44	3073.58	ASPH/GVL9+39.68 14.00R
125	658788.74	1242175.85	3073.84	RAD9+08.04 24.00R
126	658798.92	1242208.98	3072.53	RAD9+39.68 24.00R
127	658789.77	1242185.79	3074.00	GVL9+17.03 25.49R
128	658779.32	1242186.88	3074.20	GVL9+15.50 35.86R
129	658783.39	1242200.53	3074.15	GVL9+27.96 35.86R

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
130	658797.89	1242199.03	3073.85	GVL9+30.78 21.62R
131	658838.71	1242206.00	3073.53	ASPH/GVL9+51.64 14.00L
132	658852.60	1242205.24	3073.25	ASPH/GVL9+57.05 27.00L
133	658867.60	1242246.77	3073.13	ASPH/GVL10+04.97 19.05L
134	658874.06	1242242.14	3073.01	ASPH/GVL10+04.97 27.00L
135	658845.38	1242208.56	3073.37	ASPHLT/GVL9+57.05 19.05L
136	658857.38	1242203.04	3072.68	GVL9+57.05 32.26L
137	658860.71	1242290.60	3073.11	ASPH/GVL10+34.96 14.00R
138	658916.66	1242339.03	3072.82	ASPH/GVL11+06.80 14.00R
139	658842.29	1242307.50	25.00	RAD10+34.96 39.00R
140	658901.19	1242358.67	25.00	RAD11+06.80 39.00R
141	658861.52	1242323.47	3074.13	GVL10+56.58 36.70R
142	658850.38	1242336.89	3074.00	GVL10+57.28 54.12R
143	658871.92	1242354.78	3073.98	GVL10+81.41 54.06R
144	658881.95	1242342.69	3074.07	GVL10+81.81 38.36R
145	658891.86	1242319.49	3072.91	ASPH10+75.23 14.00R
146	658909.18	1242297.50	3072.91	ASPH10+75.23 14.00L
147	658912.28	1242293.57	3072.78	ASPH10+75.23 19.00L
148	658917.23	1242287.28	3072.66	ASPH10+75.23 27.00L
149	658928.64	1242312.82	3072.83	ASPH11+00.00 14.00L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
153	658930.29	1242310.73	3073.18	ASPH/TBC - BEGIN TAPER11+00.00 16.67L
336	658885.04	1242234.26	3071.78	GVL10+04.97 40.51L
337	658866.52	1242253.84	3073.23	ASPH/GVL10+10.38 14.00L
338	658932.65	1242312.58	0.00	ASPH/TBC - END OF TAPER11+03.00 16.67L

10' 5' 0 10' 20'
SCALE: 1"= 20'

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 POINTS PLAN.dwg 5/19/2025 12:27pm

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:
Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.19

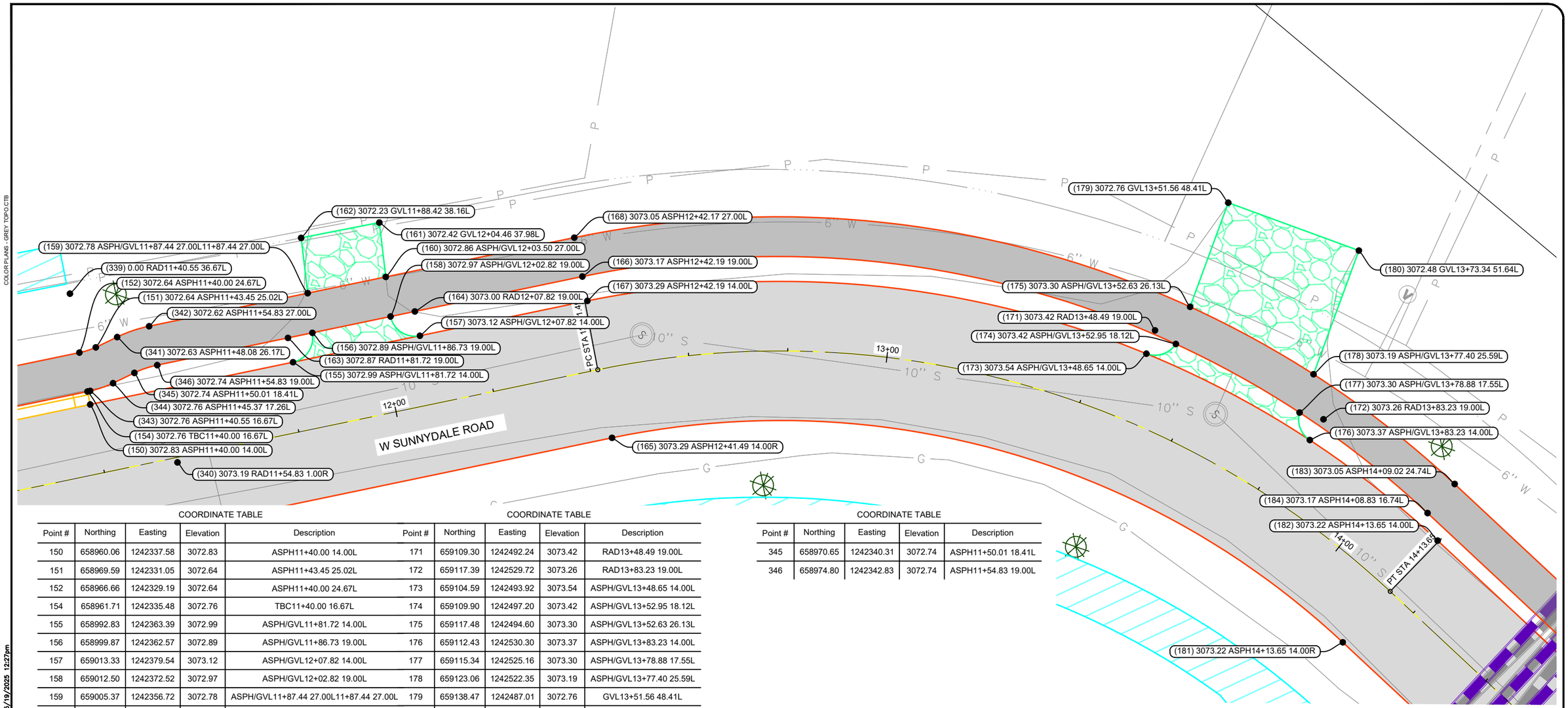
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
POINTS PLAN 3 OF 7

SHEET NO:
43



COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
150	658960.06	1242337.58	3072.83	ASPH11+40.00 14.00L
151	658969.59	1242331.05	3072.64	ASPH11+43.45 25.02L
152	658966.66	1242329.19	3072.64	ASPH11+40.00 24.67L
154	658961.71	1242335.48	3072.76	TBC11+40.00 16.67L
155	658992.83	1242363.39	3072.99	ASPH/GVL11+81.72 14.00L
156	658999.87	1242362.57	3072.89	ASPH/GVL11+86.73 19.00L
157	659013.33	1242379.54	3073.12	ASPH/GVL12+07.82 14.00L
158	659012.50	1242372.52	3072.97	ASPH/GVL12+02.82 19.00L
159	659005.37	1242356.72	3072.78	ASPH/GVL11+87.44 27.00L11+87.44 27.00L
160	659017.99	1242366.66	3072.86	ASPH/GVL12+03.50 27.00L
161	659025.54	1242358.63	3072.42	GVL12+04.46 37.98L
162	659013.05	1242348.56	3072.23	GVL11+88.42 38.16L
163	658995.92	1242359.46	3072.87	RAD11+81.72 19.00L
164	659016.43	1242375.61	3073.00	RAD12+07.82 19.00L
165	659022.46	1242422.38	3073.29	ASPH12+41.49 14.00R
166	659043.49	1242396.93	3073.17	ASPH12+42.19 19.00L
167	659040.38	1242400.85	3073.29	ASPH12+42.19 14.00L
168	659048.44	1242390.65	3073.05	ASPH12+42.17 27.00L
169	658924.68	1242547.76	200.00	RAD12+61.39 172.96R
170	658919.73	1242552.77	166.00	RAD12+41.49 180.00R

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
171	659109.30	1242492.24	3073.42	RAD13+48.49 19.00L
172	659117.39	1242529.72	3073.26	RAD13+83.23 19.00L
173	659104.59	1242493.92	3073.54	ASPH/GVL13+48.65 14.00L
174	659109.90	1242497.20	3073.42	ASPH/GVL13+52.95 18.12L
175	659117.48	1242494.60	3073.30	ASPH/GVL13+52.63 26.13L
176	659112.43	1242530.30	3073.37	ASPH/GVL13+83.23 14.00L
177	659115.34	1242525.16	3073.30	ASPH/GVL13+78.88 17.55L
178	659123.06	1242522.35	3073.19	ASPH/GVL13+77.40 25.59L
179	659138.47	1242487.01	3072.76	GVL13+51.56 48.41L
180	659147.99	1242513.34	3072.48	GVL13+73.34 51.64L
181	659085.50	1242561.55	3073.22	ASPH14+13.65 14.00R
182	659113.46	1242563.03	3073.22	ASPH14+13.65 14.00L
183	659124.40	1242558.33	3073.05	ASPH14+09.02 24.74L
184	659116.41	1242557.91	3073.17	ASPH14+08.83 16.74L
339	658974.53	1242320.11	0.00	RAD11+40.55 36.67L
340	658962.43	1242358.54	3073.19	RAD11+54.83 1.00R
341	658973.94	1242333.01	3072.63	ASPH11+48.08 26.17L
342	658979.76	1242336.54	3072.62	ASPH11+54.83 27.00L
343	658962.15	1242335.82	3072.76	ASPH11+40.55 16.67L
344	658966.30	1242338.34	3072.76	ASPH11+45.37 17.26L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
345	658970.65	1242340.31	3072.74	ASPH11+50.01 18.41L
346	658974.80	1242342.83	3072.74	ASPH11+54.83 19.00L

10' 5' 0 10' 20'
SCALE: 1"= 20'

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.16

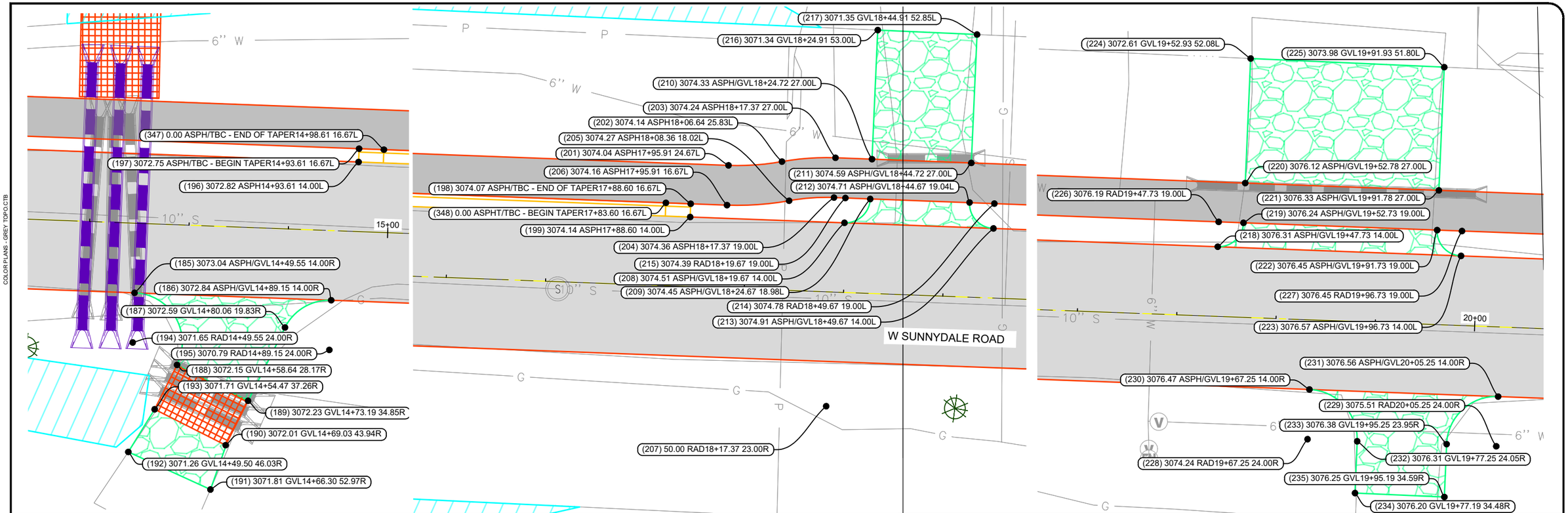
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
POINTS PLAN 4 OF 7

SHEET NO:
44



COLOR PLANS - GREY TOPO.CTB

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
185	659083.60	1242597.40	3073.04	ASPH/GVL14+49.55 14.00R
186	659081.51	1242636.95	3072.84	ASPH/GVL14+89.15 14.00R
187	659076.17	1242627.56	3072.59	GVL14+80.06 19.83R
188	659068.98	1242605.73	3072.15	GVL14+58.64 28.17R
189	659061.54	1242619.91	3072.23	GVL14+73.19 34.85R
190	659052.68	1242615.27	3072.01	GVL14+69.03 43.94R
191	659043.80	1242612.06	3071.81	GVL14+66.30 52.97R
192	659051.62	1242595.66	3071.26	GVL14+49.50 46.03R
193	659060.11	1242601.08	3071.71	GVL14+54.47 37.26R
194	659073.62	1242596.87	3071.65	RAD14+49.55 24.00R
195	659071.52	1242636.42	3070.79	RAD14+89.15 24.00R
196	659109.23	1242642.88	3072.82	ASPH14+93.61 14.00L
197	659111.90	1242643.02	3072.75	ASPH/TBC - BEGIN TAPER14+93.61 16.67L
198	659096.31	1242937.60	3074.07	ASPH/TBC - END OF TAPER17+88.60 16.67L
199	659093.64	1242937.46	3074.14	ASPH17+88.60 14.00L
200	659153.84	1242947.96	42.00	RAD17+95.91 74.67L
201	659103.91	1242945.32	3074.04	ASPH17+95.91 24.67L
202	659104.50	1242956.10	3074.14	ASPH18+06.64 25.83L
203	659105.10	1242966.87	3074.24	ASPH18+17.37 27.00L
204	659097.11	1242966.45	3074.36	ASPH18+17.37 19.00L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
205	659096.61	1242957.40	3074.27	ASPH18+08.36 18.02L
206	659095.92	1242944.90	3074.16	ASPH17+95.91 16.67L
207	659055.17	1242964.23	50.00	RAD18+17.37 23.00R
208	659092.00	1242968.48	3074.51	ASPH/GVL18+19.67 14.00L
209	659096.71	1242973.74	3074.45	ASPH/GVL18+24.67 18.98L
210	659104.71	1242974.22	3074.33	ASPH/GVL18+24.72 27.00L
211	659103.65	1242994.19	3074.59	ASPH/GVL18+44.72 27.00L
212	659095.70	1242993.71	3074.71	ASPH/GVL18+44.67 19.04L
213	659090.41	1242998.44	3074.91	ASPH/GVL18+49.67 14.00L
214	659095.40	1242998.70	3074.78	RAD18+49.67 19.00L
215	659096.99	1242968.74	3074.39	RAD18+19.67 19.00L
216	659130.66	1242975.77	3071.34	GVL18+24.91 53.00L
217	659129.46	1242995.74	3071.35	GVL18+44.91 52.85L
218	659085.23	1243096.36	3076.31	ASPH/GVL19+47.73 14.00L
219	659089.95	1243101.62	3076.24	ASPH/GVL19+52.73 19.00L
220	659097.94	1243102.09	3076.12	ASPH/GVL19+52.78 27.00L
221	659095.88	1243141.03	3076.33	ASPH/GVL19+91.78 27.00L
222	659087.89	1243140.56	3076.45	ASPH/GVL19+91.73 19.00L
223	659082.64	1243145.29	3076.57	ASPH/GVL19+96.73 14.00L
224	659122.98	1243103.57	3072.61	GVL19+52.93 52.08L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
225	659120.64	1243142.50	3073.98	GVL19+91.93 51.80L
226	659090.22	1243096.62	3076.19	RAD19+47.73 19.00L
227	659087.63	1243145.56	3076.45	RAD19+96.73 19.00L
228	659046.25	1243113.84	3074.24	RAD19+67.25 24.00R
229	659044.24	1243151.79	3075.51	RAD20+05.25 24.00R
230	659056.23	1243114.37	3076.47	ASPH/GVL19+67.25 14.00R
231	659054.22	1243152.32	3076.56	ASPH/GVL20+05.25 14.00R
232	659045.67	1243123.83	3076.31	GVL19+77.25 24.05R
233	659044.82	1243141.81	3076.38	GVL19+95.25 23.95R
234	659035.26	1243123.22	3076.20	GVL19+77.19 34.48R
235	659034.19	1243141.19	3076.25	GVL19+95.19 34.59R
347	659111.64	1242648.01	0.00	ASPH/TBC - END OF TAPER14+98.61 16.67L
348	659096.57	1242932.60	0.00	ASPHT/TBC - BEGIN TAPER17+83.60 16.67L

10' 5' 0 10' 20'
SCALE: 1"= 20'

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 POINTS PLAN.dwg 5/19/2025 12:27pm

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:
Box Elder
Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.19

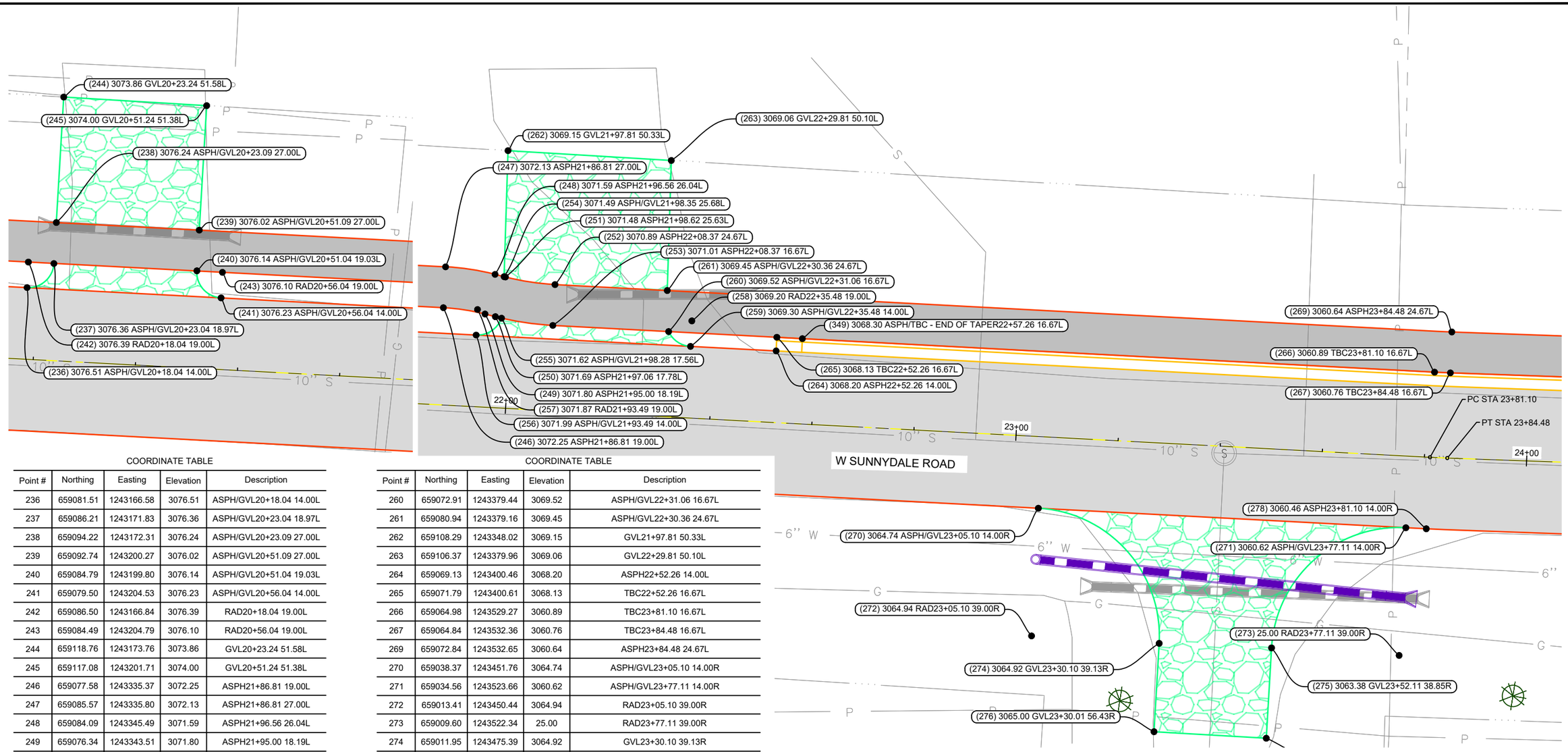
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
POINTS PLAN 5 OF 7

SHEET NO:
45



COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
236	659081.51	1243166.58	3076.51	ASPH/GVL20+18.04 14.00L
237	659086.21	1243171.83	3076.36	ASPH/GVL20+23.04 18.97L
238	659094.22	1243172.31	3076.24	ASPH/GVL20+23.09 27.00L
239	659092.74	1243200.27	3076.02	ASPH/GVL20+51.09 27.00L
240	659084.79	1243199.80	3076.14	ASPH/GVL20+51.04 19.03L
241	659079.50	1243204.53	3076.23	ASPH/GVL20+56.04 14.00L
242	659086.50	1243166.84	3076.39	RAD20+18.04 19.00L
243	659084.49	1243204.79	3076.10	RAD20+56.04 19.00L
244	659118.76	1243173.76	3073.86	GVL20+23.24 51.58L
245	659117.08	1243201.71	3074.00	GVL20+51.24 51.38L
246	659077.58	1243335.37	3072.25	ASPH21+86.81 19.00L
247	659085.57	1243335.80	3072.13	ASPH21+86.81 27.00L
248	659084.09	1243345.49	3071.59	ASPH21+96.56 26.04L
249	659076.34	1243343.51	3071.80	ASPH21+95.00 18.19L
250	659075.82	1243345.54	3071.69	ASPH21+97.06 17.78L
251	659083.58	1243347.51	3071.48	ASPH21+98.62 25.63L
252	659082.10	1243357.20	3070.89	ASPH22+08.37 24.67L
253	659074.11	1243356.78	3071.01	ASPH22+08.37 16.67L
254	659083.64	1243347.25	3071.49	ASPH/GVL21+98.35 25.68L
255	659075.53	1243346.75	3071.62	ASPH/GVL21+98.28 17.56L
256	659072.23	1243341.78	3071.99	ASPH/GVL21+93.49 14.00L
257	659077.23	1243342.04	3071.87	RAD21+93.49 19.00L
258	659075.01	1243383.98	3069.20	RAD22+35.48 19.00L
259	659070.01	1243383.71	3069.30	ASPH/GVL22+35.48 14.00L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
260	659072.91	1243379.44	3069.52	ASPH/GVL22+31.06 16.67L
261	659080.94	1243379.16	3069.45	ASPH/GVL22+30.36 24.67L
262	659108.29	1243348.02	3069.15	GVL21+97.81 50.33L
263	659106.37	1243379.96	3069.06	GVL22+29.81 50.10L
264	659069.13	1243400.46	3068.20	ASPH22+52.26 14.00L
265	659071.79	1243400.61	3068.13	TBC22+52.26 16.67L
266	659064.98	1243529.27	3060.89	TBC23+81.10 16.67L
267	659064.84	1243532.36	3060.76	TBC23+84.48 16.67L
269	659072.84	1243532.65	3060.64	ASPH23+84.48 24.67L
270	659038.37	1243451.76	3064.74	ASPH/GVL23+05.10 14.00R
271	659034.56	1243523.66	3060.62	ASPH/GVL23+77.11 14.00R
272	659013.41	1243450.44	3064.94	RAD23+05.10 39.00R
273	659009.60	1243522.34	25.00	RAD23+77.11 39.00R
274	659011.95	1243475.39	3064.92	GVL23+30.10 39.13R
275	659011.07	1243497.38	3063.38	GVL23+52.11 38.85R
276	658994.68	1243474.39	3065.00	GVL23+30.01 56.43R
277	658993.40	1243496.35	3064.63	GVL23+52.01 56.55R
278	659034.35	1243527.65	3060.46	ASPH23+81.10 14.00R
349	659071.53	1243405.60	3068.30	ASPH/TBC - END OF TAPER22+57.26 16.67L

10' 5' 0 10' 20'
SCALE: 1"= 20'

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO: Box Elder — Innovative Community - Opportunities for All

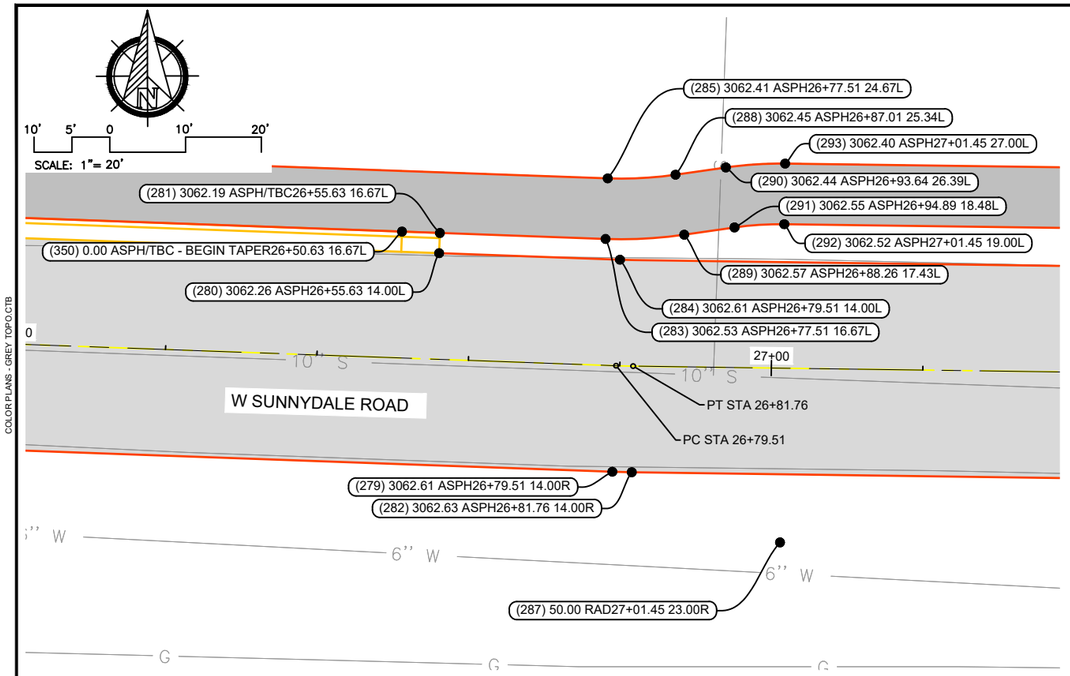
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
20250516

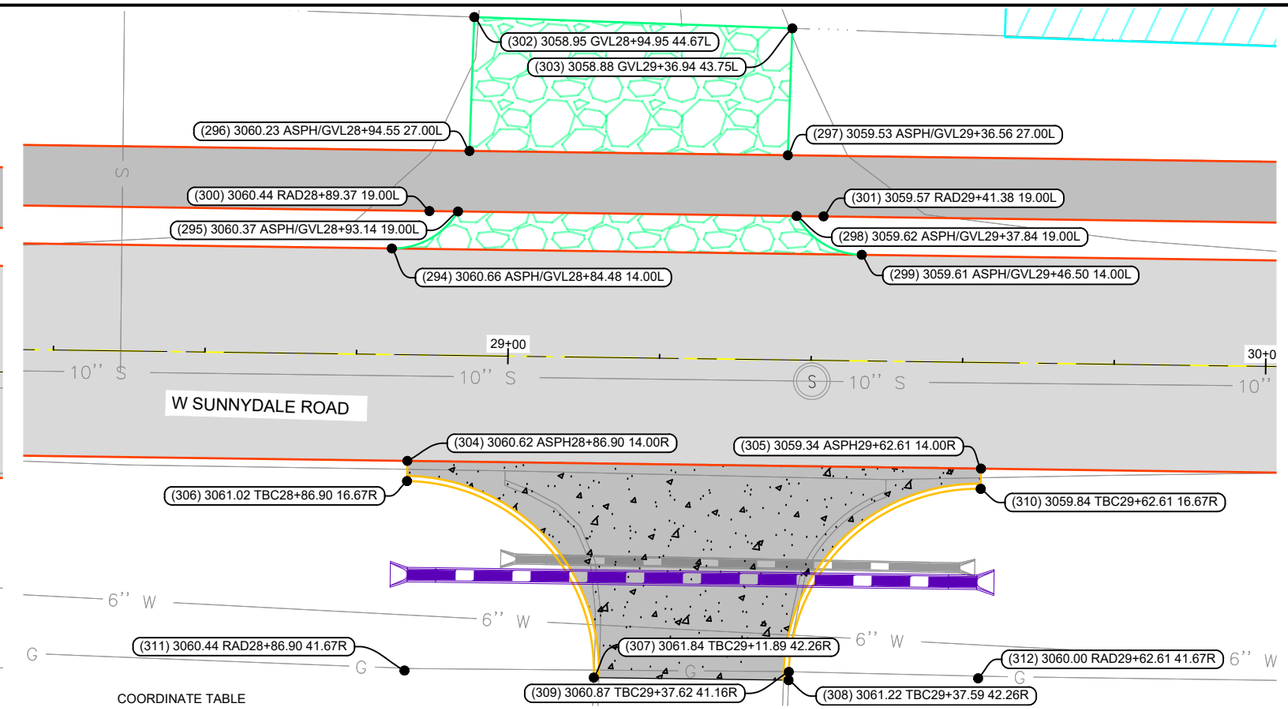
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: **POINTS PLAN 6 OF 7**
SHEET NO: **46**





COORDINATE TABLE

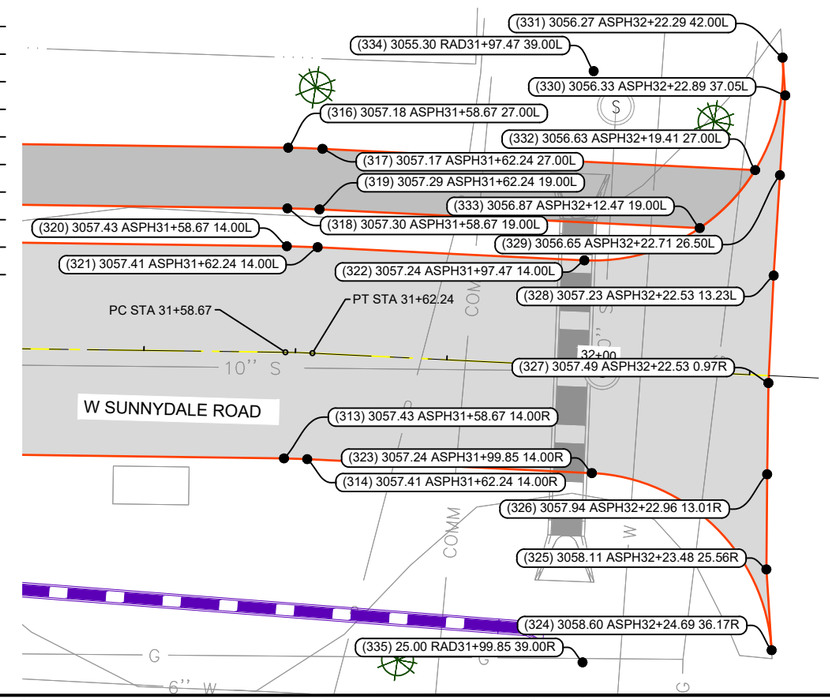
Point #	Northing	Easting	Elevation	Description
279	659023.57	1243826.10	3062.61	ASPH26+79.51 14.00R
280	659052.41	1243803.24	3062.26	ASPH26+55.63 14.00L
281	659055.08	1243803.34	3062.19	ASPH/TBC26+55.63 16.67L
282	659023.51	1243828.66	3062.63	ASPH26+81.76 14.00R
283	659054.29	1243825.20	3062.53	ASPH26+77.51 16.67L
284	659051.55	1243827.11	3062.61	ASPH26+79.51 14.00L
285	659062.29	1243825.49	3062.41	ASPH26+77.51 24.67L
286	659112.26	1243827.29	50.00	RAD26+77.51 74.67L
287	659014.24	1243848.23	50.00	RAD27+01.45 23.00R
288	659062.77	1243834.44	3062.45	ASPH26+87.01 25.34L
289	659054.85	1243835.58	3062.57	ASPH26+88.26 17.43L
290	659063.73	1243841.08	3062.44	ASPH26+93.64 26.39L
291	659055.81	1243842.23	3062.55	ASPH26+94.89 18.48L
292	659056.24	1243848.80	3062.52	ASPH27+01.45 19.00L
293	659064.24	1243848.91	3062.40	ASPH27+01.45 27.00L
294	659048.77	1244031.74	3060.66	ASPH/GVL28+84.48 14.00L
295	659053.65	1244040.47	3060.37	ASPH/GVL28+93.14 19.00L
296	659061.63	1244041.99	3060.23	ASPH/GVL28+94.55 27.00L
297	659061.06	1244084.00	3059.53	ASPH/GVL29+36.56 27.00L
298	659053.04	1244085.16	3059.62	ASPH/GVL29+37.84 19.00L
299	659047.93	1244093.75	3059.61	ASPH/GVL29+46.50 14.00L
300	659053.70	1244036.70	3060.44	RAD28+89.37 19.00L
301	659053.00	1244088.71	3059.57	RAD29+41.38 19.00L
302	659079.29	1244042.62	3058.95	GVL28+94.95 44.67L

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
303	659077.81	1244084.60	3058.88	GVL29+36.94 43.75L
304	659020.73	1244033.78	3060.62	ASPH28+86.90 14.00R
305	659019.71	1244109.49	3059.34	ASPH29+62.61 14.00R
306	659018.07	1244033.75	3061.02	TBC28+86.90 16.67R
307	658992.14	1244058.39	3061.84	TBC29+11.89 42.26R
308	658991.80	1244084.09	3061.22	TBC29+37.59 42.26R
309	658992.89	1244084.13	3060.87	TBC29+37.62 41.16R
310	659017.04	1244109.45	3059.84	TBC29+62.61 16.67R
311	658993.07	1244033.41	3060.44	RAD28+86.90 41.67R
312	658992.04	1244109.11	3060.00	RAD29+62.61 41.67R
313	659017.06	1244305.53	3057.43	ASPH31+58.67 14.00R
314	659016.96	1244308.60	3057.41	ASPH31+62.24 14.00R
315	658931.07	1244304.37	114.00	RAD31+58.67 100.00R
316	659058.06	1244306.08	3057.18	ASPH31+58.67 27.00L
317	659057.91	1244310.61	3057.17	ASPH31+62.24 27.00L
318	659050.06	1244305.98	3057.30	ASPH31+58.67 19.00L
319	659049.92	1244310.22	3057.29	ASPH31+62.24 19.00L
320	659045.06	1244305.91	3057.43	ASPH31+58.67 14.00L
321	659044.93	1244309.97	3057.41	ASPH31+62.24 14.00L
322	659043.20	1244345.16	3057.24	ASPH31+97.47 14.00L
323	659015.12	1244346.16	3057.24	ASPH31+99.85 14.00R
324	658991.75	1244369.88	3058.60	ASPH32+24.69 36.17R
325	659002.41	1244369.19	3058.11	ASPH32+23.48 25.56R
326	659014.97	1244369.29	3057.94	ASPH32+22.96 13.01R

COORDINATE TABLE

Point #	Northing	Easting	Elevation	Description
327	659027.01	1244369.46	3057.49	ASPH32+22.53 0.97R
328	659041.19	1244370.16	3057.23	ASPH32+22.53 13.23L
329	659054.44	1244370.98	3056.65	ASPH32+22.71 26.50L
330	659064.97	1244371.69	3056.33	ASPH32+22.89 37.05L
331	659069.95	1244371.33	3056.27	ASPH32+22.29 42.00L
332	659055.10	1244367.71	3056.63	ASPH32+19.41 27.00L
333	659047.45	1244360.39	3056.87	ASPH32+12.47 19.00L
334	659068.17	1244346.39	3055.30	RAD31+97.47 39.00L
335	658990.15	1244344.93	25.00	RAD31+99.85 39.00R
350	659055.26	1243798.34	0.00	ASPH/TBC - BEGIN TAPER26+50.63 16.67L



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LOGO:

Box Elder — Innovative Community - Opportunities for All

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

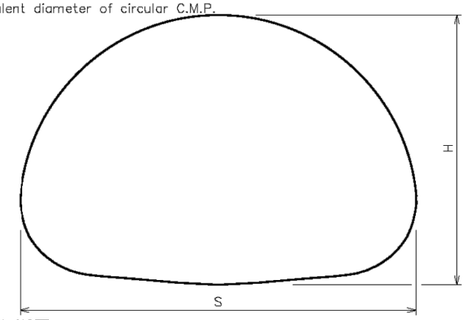
SHEET NAME:
POINTS PLAN 7 OF 7

SHEET NO:
47

DETAIL RC020-CULVERT-CMP-ARCH

* Dia. (in.)	2⅔"×½" CORRUGATIONS S Span (in.)	H Rise (in.)	Area (Sq. Ft.)	3" X 1" CORRUGATIONS S Span (in.)	H Rise (in.)	Area (Sq. Ft.)
15	17	13	1.1			
18	21	15	1.6			
21	24	18	2.2			
24	28	20	2.8			
30	35	24	4.4			
36	42	29	6.4	40	31	7.0
42	49	33	8.7	46	36	9.4
48	57	38	11.4	53	41	12.3
54	64	43	14.3	60	46	15.6
60	71	47	17.6	66	51	19.3
66	77	52	21.3	73	55	23.2
72	83	57	25.3	81	59	27.4
78				87	63	32.1
84				95	67	37.0
90				103	71	42.4
96				112	75	48.0
102				117	79	54.2
108				128	83	60.8
114				137	87	67.4
120				142	91	74.5

* Equivalent diameter of circular C.M.P.



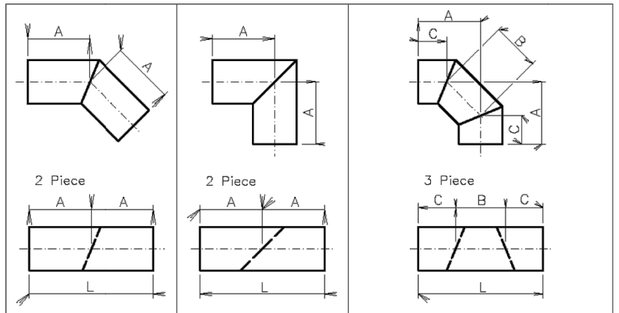
GENERAL NOTE:
All dimensions measured from inside crest.

CORRUGATED METAL PIPE ARCH CULVERT
NOT TO SCALE

CITY OF BOX ELDER
STANDARD DETAIL
CULVERT-CMP-ARCH

DETAIL #RC020 REVISED 01/2020

DETAIL RC023-CULVERT-CMP ELBOWS



Diameter Inches	A Feet	L Feet	Diameter Inches	A Feet	L Feet	Diameter Inches	A Inches	B Inches	C Inches	L Feet
12	1	2	12	2	4	12	25?	11	18?	4
15	1	2	15	2	4	15	26?	12	18	4
18	1	2	18	2	4	18	27	14	17	4
21	2	4	21	2	4	21	27	15	16?	4
24	2	4	24	2	4	24	27?	16	16	4
27	2	4	27	2	4	27	27?	17	15?	4
30	2	4	30	3	6	30	40	19	26?	6
33	2	4	33	3	6	33	40	20	26	6
36	2	4	36	3	6	36	40?	21	25?	6
42	2	4	42	3	6	42	41	23	24?	6
48	2	4	48	4	8	48	53?	26	35	8
54	3	6	54	4	8	54	54	28	34	8
60	3	6	60	4	8	60	54?	31	32?	8
66	3	6	66	4	8	66	54	33	31?	8
72	3	6	72	5	10	72	67?	36	42	10
78	3	6	78	5	10	78	68	39	40?	10
84	3	6	84	5	10	84	68?	41	39?	10
90	3	6	90	6	12	90	70	46	37	10
96	3	6	96	6	12	96	82	46	49	12

FABRICATED ELBOW LENGTHS FOR ALL CORRUGATIONS

GENERAL NOTES:
All dimensions shown are nominal.
L = Linear Feet of C.M.P. required to fabricate fitting.

CORRUGATED METAL PIPE FABRICATED LENGTHS FOR ELBOWS
NOT TO SCALE

CITY OF BOX ELDER
STANDARD DETAIL
CULVERT-CMP ELBOWS

DETAIL #RC023 REVISED 01/2020

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Ryan J. Wright
SOUTH DAKOTA
2025-05-19

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

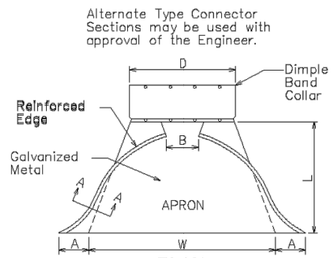
REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

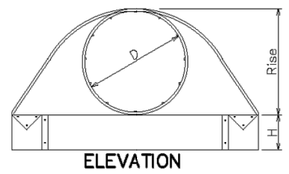
SHEET NAME:
DETAILS 1 OF 9

SHEET NO:
48

DETAIL RC024-CULVERT-CMP FLARED ENDS-ROUND



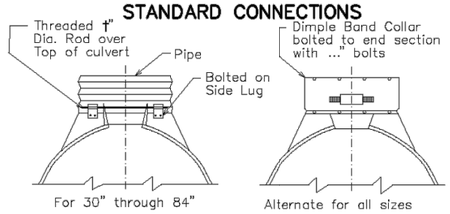
PLAN

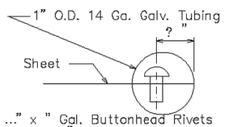


ELEVATION

Dia. D (in.)	Ga.	DIMENSIONS (in.) A	B	H	L	W	Approx. Slope	Body
12	16	6	6	6	21	24	2?:1	1 Pc.
15	16	7	8	6	26	30	2?:1	1 Pc.
18	16	8	10	6	31	36	2?:1	1 Pc.
21	16	9	12	6	36	42	2?:1	1 Pc.
24	16	10	13	6	41	48	2?:1	1 Pc.
30	14	12	16	8	46	60	2?:1	1 Pc.
36	14	14	19	9	51	72	2?:1	2 Pc.
42	12	16	22	11	60	84	2?:1	2 Pc.
48	12	18	27	12	69	90	2?:1	2 Pc.
54	12	18	30	12	78	102	2:1	3 Pc.
60	12	18	33	12	84	114	1?:1	3 Pc.
66	12	18	36	12	87	120	1?:1	3 Pc.
72	12	18	39	12	87	126	1 1/3:1	3 Pc.
78	12	18	42	12	87	132	1?:1	3 Pc.
84	12	18	45	12	87	138	1 1/6:1	3 Pc.

STANDARD CONNECTIONS

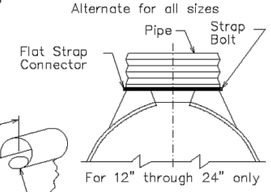


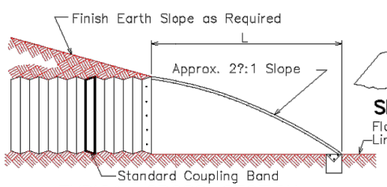


..." x " Gal. Buttonhead Rivets spaced 6" C. to C. Overall length of rivets=0.78"

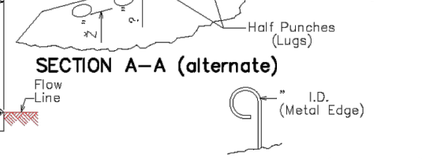
TUBING ATTACHMENT DETAILS SECTION A–A

NOTE:
Tubing is slipped over the sheet and rivets or lugs prior to forming operations of the apron.





TYPICAL CROSS–SECTION



SECTION A–A (alternate)

SECTION A–A (alternate)

GENERAL NOTES:

All 3 pc. bodies shall have 12 Ga. sides and 10 Ga. center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams tightly joined by ..." Dia. galvanized rivets or bolts.

For 60" through 84" sizes, reinforced edges shall be supplemented with galvanized stiffener angles. The angles will be 2" x 2" x ," for 60" through 72" diameters and 2" x 2" x," for 78" and 84" diameters. The angles shall be attached by ..." diameter galvanized nuts and bolts.

Rivets and Bolts shall be ..." Dia. Min. for 10 Ga. and 12 Ga. sheet, and Š" Dia. Min. for 14 Ga. and 16 Ga. sheets. Tighten nuts with torque wrench to 25 lbs. torque.

CORRUGATED METAL PIPE FLARED ENDS-ROUND

NOT TO SCALE

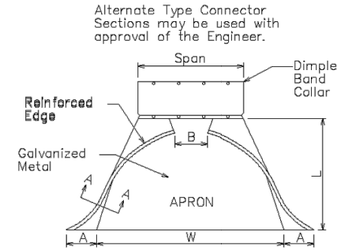
CITY OF BOX ELDER

STANDARD DETAIL

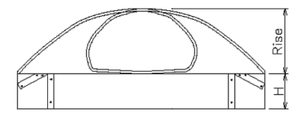
CULVERT-CMP FLARED ENDS-ROUND

DETAIL #RC024 REVISED 01/2020

DETAIL RC025-CULVERT-CMP FLARED ENDS-ARCH



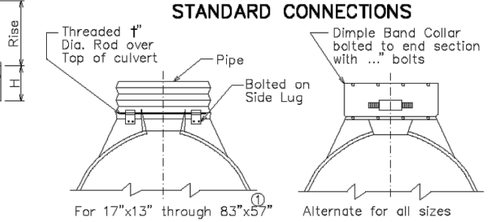
PLAN



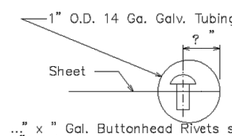
ELEVATION

Span x Rise (in.)x(in.)	Equiv. Dia. (in.)	Ga.	APPROX. DIMENSIONS (in.) A	B	H	L	W	Approx. Slope	Body
17x13	15	16	7	9	6	19	30	2?:1	1 Pc.
21x15	18	16	7	10	6	23	36	2?:1	1 Pc.
24x18	21	16	8	12	6	28	42	2?:1	1 Pc.
28x20	24	16	9	14	6	32	48	2?:1	1 Pc.
35x24	30	14	10	16	6	39	60	2?:1	1 Pc.
42x29	36	14	12	18	8	46	75	2?:1	1 Pc.
49x33	42	12	13	21	9	53	85	2?:1	2 Pc.
57x38	48	12	16	26	12	63	90	2?:1	2 Pc.
64x43	54	12	18	30	12	70	102	2?:1	2 Pc.
71x47	60	12	18	33	12	77	114	2?:1	3 Pc.
77x52	66	12	18	36	12	77	126	2:1	3 Pc.
83x57	72	12	18	39	12	77	133	2:1	3 Pc.

STANDARD CONNECTIONS



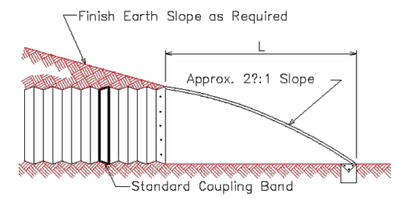
① For 17" through 28" span pipe–arches a flat strap connector may be used in place of the rod connection. Strap connector shall be 1" wide, 12 ga. strap with standard 6" long x " dia. bond bolt and nut.



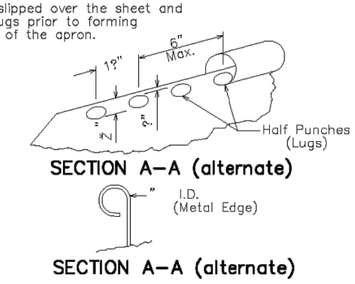
..." x " Gal. Buttonhead Rivets spaced 6" C. to C. Overall length of rivets=0.78"

TUBING ATTACHMENT DETAILS SECTION A–A

NOTE:
Tubing is slipped over the sheet and rivets or lugs prior to forming operations of the apron.



TYPICAL CROSS–SECTION



SECTION A–A (alternate)

SECTION A–A (alternate)

GENERAL NOTES:

All 3 pc. bodies shall have 12 Ga. sides and 10 Ga. center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies shall have lap seams tightly joined by ..." Dia. galvanized rivets or bolts.

For 77" x 52" and 83" x 57" sizes, reinforced edges shall be supplemented with galvanized stiffener angles. The angles will be 2" x 2" x ," for both the 77" x 52" size and the 83" x 57" size. The angles shall be attached by ..." Dia. galvanized nuts and bolts.

Rivets and Bolts shall be ..." Dia. Min. for 10 Ga. and 12 Ga. sheet, and Š" Dia. Min. for 14 Ga. and 16 Ga. sheets. Tighten nuts with torque wrench to 25 lbs. torque.

CORRUGATED METAL PIPE FLARED ENDS-ARCH

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

CULVERT-CMP FLARED ENDS-ARCH

DETAIL #RC025 REVISED 01/2020

TDG

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147 Chisholm Drive
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605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION

BOX ELDER,

SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

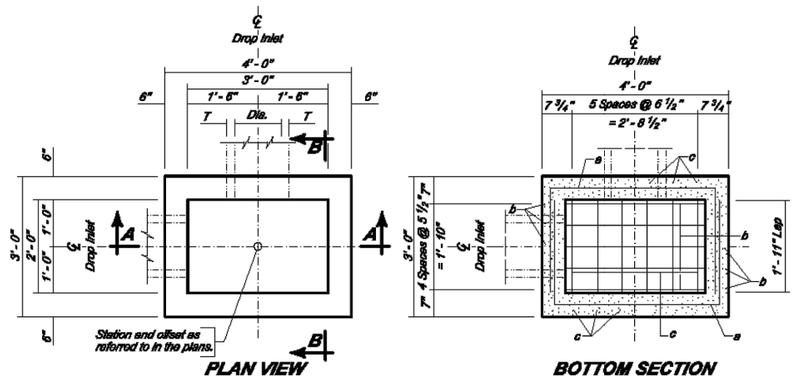
SURVEYED BY: ALL ASPECTS INC.

SURVEY DATE:

SHEET NAME: **DETAILS 2 OF 9**

SHEET NO: **49**

DETAIL RD001-DROP INLET-CONCRETE-TYPE B (2X3)-1



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	83.03	28.97H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, current edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plan to the Engineer for approval.

Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.

Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 18 inches on the 2-foot wide side and shall not exceed 24 inches (24 inches for R.C. arch) on the 3-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

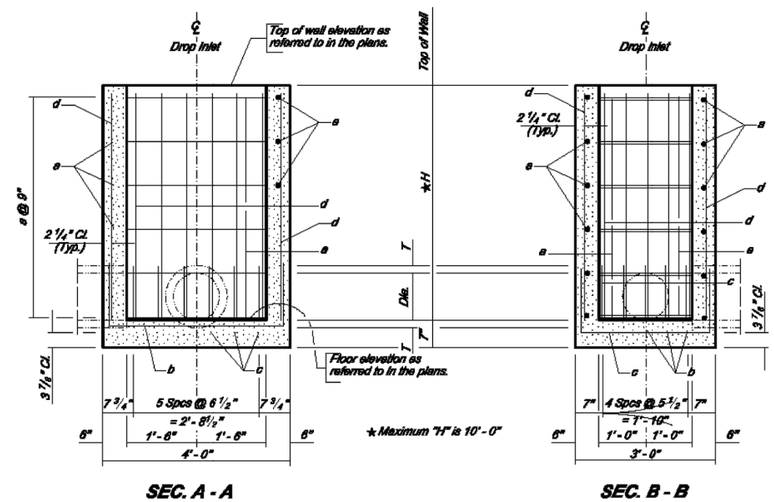
PIPE DISPLACEMENT REDUCTIONS			
	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 1/4	0.04
	18	2 1/2	0.05
	24	3	0.09
R.C. ARCH	18	2 1/2	0.05
	24	3 1/2	0.09

DROP INLET-CONCRETE-TYPE B (2'X3')
NOT TO SCALE

CITY OF BOX ELDER
STANDARD DETAIL
DROP INLET-CONC.-TYPE B-2X3-1

DETAIL #RD001 REVISED 01/2020

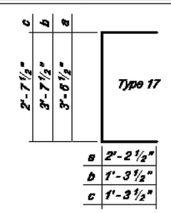
DETAIL RD002-DROP INLET-CONCRETE-TYPE B (2X3)-2



REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
a	2.67H	4	8'-0"	17
b	5	5	6'-3"	17
c	6	4	5'-3"	17
d	22	4	H-2"	Str.

Bending Details



NOTE:
All dimensions are out to out of bars.

DROP INLET-CONCRETE-TYPE B (2'X3')
NOT TO SCALE

CITY OF BOX ELDER
STANDARD DETAIL
DROP INLET-CONC.-TYPE B-2X3-2

DETAIL #RD002 REVISED 01/2020

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020_LEGEND_NOTES.dwg 5/19/2025 12:27pm

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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
2025-05-19

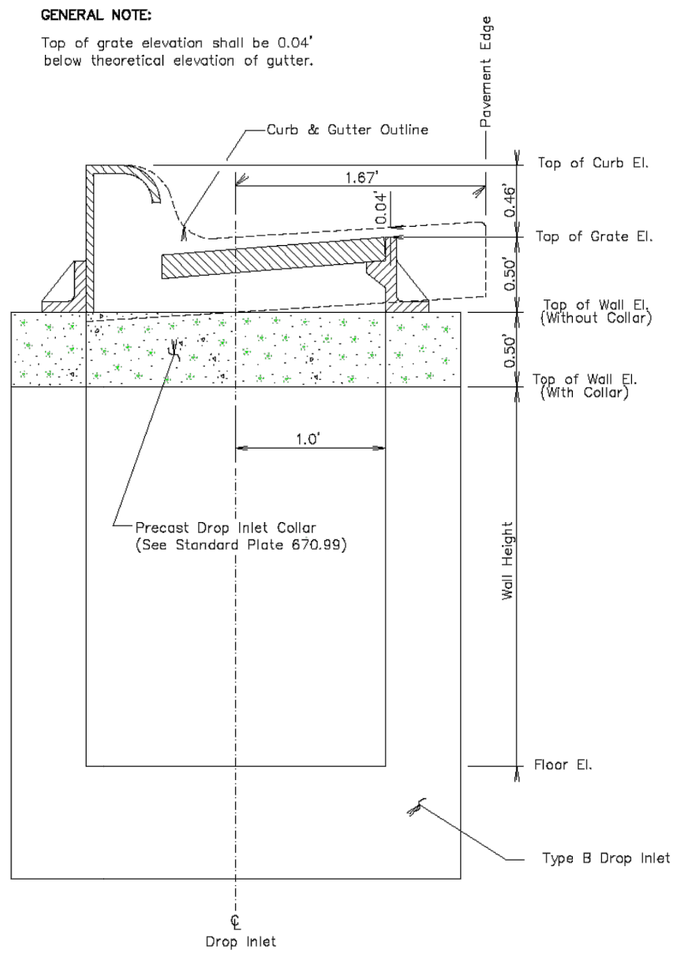
WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME: DETAILS 3 OF 9
SHEET NO: 50

DETAIL RD031-DROP INLET-CONCRETE-TYPE B-INSTALLATION



DROP INLET-CONCRETE-TYPE B-INSTALLATION

NOT TO SCALE

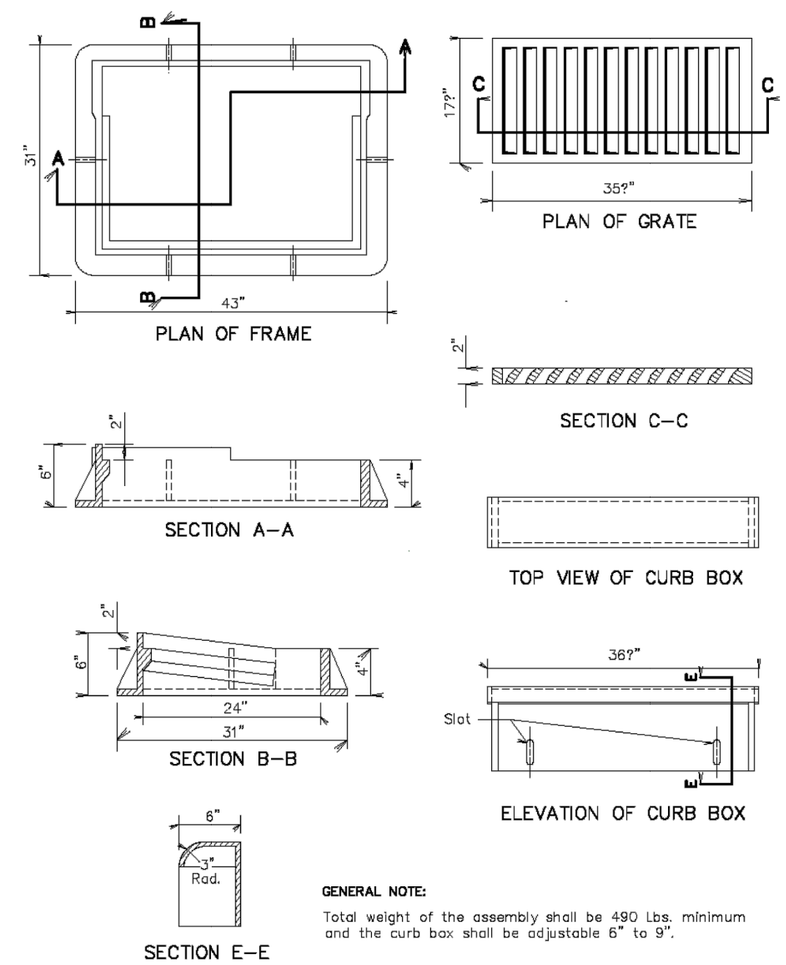
CITY OF BOX ELDER

STANDARD DETAIL

DROP INLET-CONC.-TYPE B-INST.

DETAIL #RD031 REVISED 01.2020

DETAIL RD032-DROP INLET-CONCRETE-TYPE B-FRAME AND GRATE ASSEMBLY



GENERAL NOTE:

Total weight of the assembly shall be 490 Lbs. minimum and the curb box shall be adjustable 6" to 9".

DROP INLET-CONCRETE-TYPE B-FRAME AND GRATE ASSEMBLY

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

DROP INLET-CONC.-TYPE B-FRAME

DETAIL #RD032 REVISED 01.2020

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WEST SUNNYDALE ROAD RECONSTRUCTION

BOX ELDER,

SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

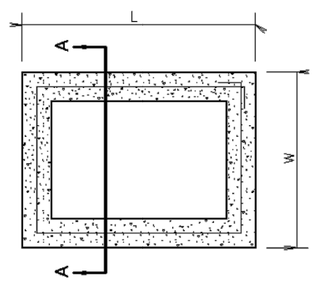
SURVEYED BY: ALL ASPECTS INC.

SURVEY DATE:

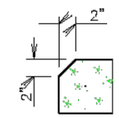
SHEET NAME: **DETAILS 4 OF 9**

SHEET NO: **51**

DETAIL RD042-DROP INLET-CONCRETE-PRECAST COLLAR

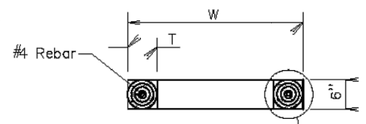


PLAN VIEW



For Type D Drop Inlets only:
Use Precast Drop Inlet Collar with 2" chamfer on L sides only.

DETAIL B



SECTION A–A

See Detail B (For Type D Drop Inlets Only)

INFORMATIONAL QUANTITIES					
FRAME AND GRATE TYPE	L Ft–In	W Ft–In	T In	CLASS M6 CONCRETE CuYd	REINFORCING STEEL Lb
TYPE B	4'–0"	3'–0"	6	0.11	9
TYPE C	5'–0"	4'–0"	6	0.15	11
TYPE D	4'–0"	2'–6"	6	0.10	8

GENERAL NOTES:

All reinforcing steel shall conform to ASTM A615, Grade 60.

The reinforcement bar shall lap 6 inches and shall be centered in the concrete.

The cost of furnishing and installing Precast Drop Inlet Collars, including labor, materials, and incidentals shall be incidental to the contract unit price per Each for "Precast Drop Inlet Collar".

DROP INLET-CONCRETE-PRECAST COLLAR

NOT TO SCALE

CITY OF BOX ELDER

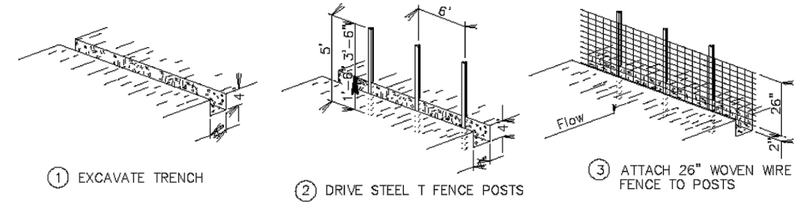
STANDARD DETAIL

DROP INLET-CONC.-PRECAST COLLAR

DETAIL #RD042 REVISED 01/2020

DETAIL RE004-EROSION CONTROL-SILT FENCE-1

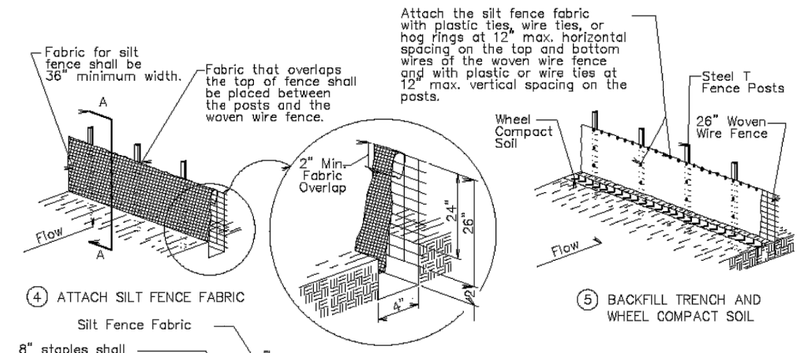
MANUAL LOW FLOW SILT FENCE INSTALLATION



1 EXCAVATE TRENCH

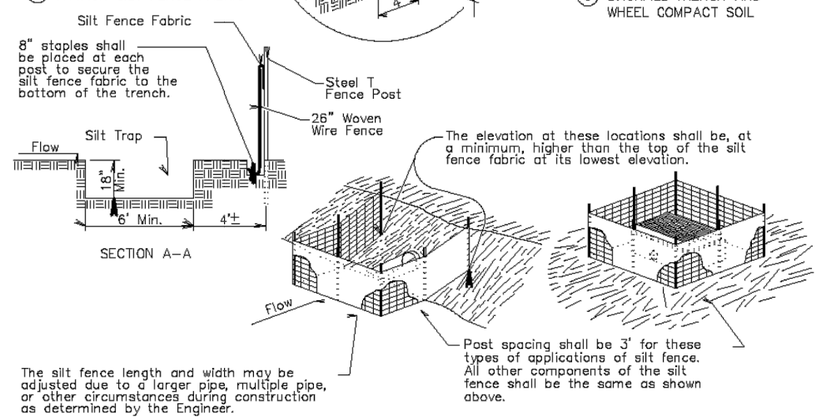
2 DRIVE STEEL T FENCE POSTS

3 ATTACH 26" WOVEN WIRE FENCE TO POSTS



4 ATTACH SILT FENCE FABRIC

5 BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A–A

EROSION CONTROL-LOW FLOW SILT FENCE AND TRAP

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

EROSION CONTROL-SILT FENCE-1

DETAIL #RE004 REVISED 01/2020

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LOGO:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION

BOX ELDER,

SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

SURVEYED BY: ALL ASPECTS INC.

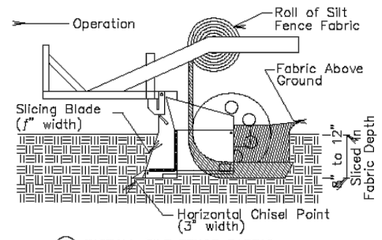
SURVEY DATE:

SHEET NAME: **DETAILS 5 OF 9**

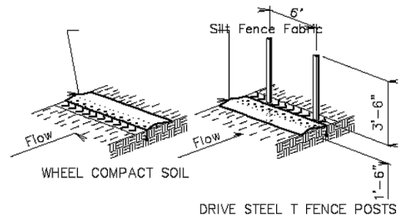
SHEET NO: **52**

DETAIL RE005-EROSION CONTROL-SILT FENCE-2

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION

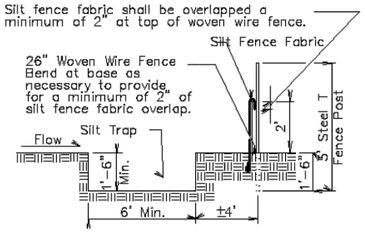


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

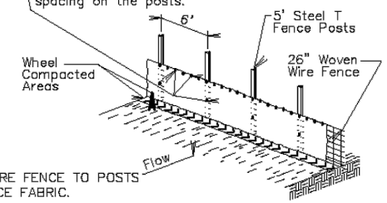


② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

Silt fence fabric shall be overlapped a minimum of 2" at top of woven wire fence.

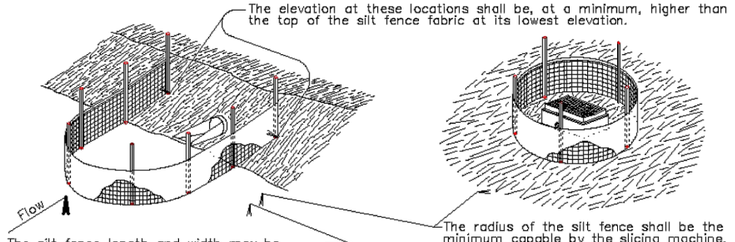


Attach the silt fence fabric with plastic ties, wire ties, or hog rings at 12" max. horizontal spacing on the top and bottom wires of the woven wire fence and with plastic or wire ties at 12" max. vertical spacing on the posts.



③ ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.

The elevation at these locations shall be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

The radius of the silt fence shall be the minimum capable by the slicing machine. The post spacing shall be 3' for these types of applications of silt fence. All other components of the silt fence shall be the same as shown above.

GENERAL NOTES:

A silt trap shall be provided when specified by a plan note. All costs for constructing the silt trap shall be incidental to the contract unit price per cubic yard for "Silt Trap".

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end shall be provided on top of the extra length of silt fence fabric to prevent underflow.

EROSION CONTROL-LOW FLOW SILT FENCE AND TRAP

NOT TO SCALE

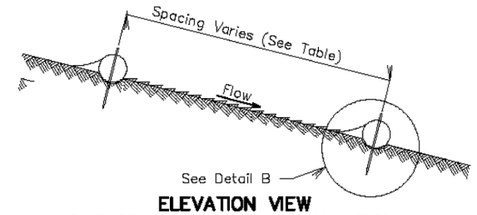
CITY OF BOX ELDER

STANDARD DETAIL

EROSION CONTROL-SILT FENCE-2

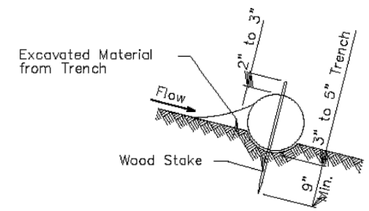
DETAIL #RE005 REVISED 01/2020

DETAIL RE006-EROSION CONTROL-WATTLE-1

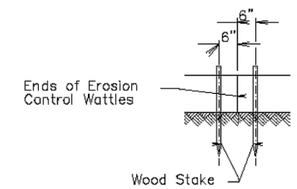


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

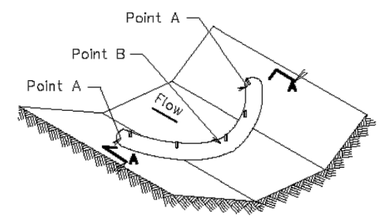
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



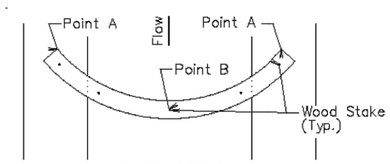
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

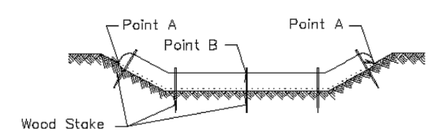


ISOMETRIC VIEW
DITCH INSTALLATION



PLAN VIEW
DITCH INSTALLATION

DITCH INSTALLATION	
Grade	Spacing (Ft)
2%	150
3%	100
4%	75
5%	50



SECTION A–A

EROSION CONTROL-WATTLE

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

EROSION CONTROL-WATTLE-1

DETAIL #RE006 REVISED 01/2020

COLOR PLANS - GREY TOPO.CTB

P:\25-020 - W. Sunnydale Reconstruction\25-020-E01\Drawings\Sheets\25-020 LEGEND NOTES.dwg 5/19/2025 12:28pm

TDG

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LOGO:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 17533 Ryan J. Wright SOUTH DAKOTA 2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION

BOX ELDER,

SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

SURVEYED BY: ALL ASPECTS INC.

SURVEY DATE:

SHEET NAME: **DETAILS 6 OF 9**

SHEET NO: **53**

DETAIL RE007-EROSION CONTROL-WATTLE-2

GENERAL NOTES:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

Where installing running lengths of wattles, the Contractor shall butt the second wattle tightly against the first and shall not overlap the ends. See Detail C.

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2" . The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

EROSION CONTROL-WATTLE

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

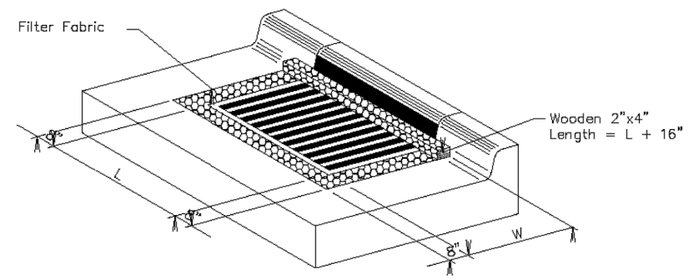
EROSION CONTROL-WATTLE-2

DETAIL #RE007 REVISED 01.2020

DETAIL RE008-EROSION CONTROL-INLETS-1

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".

EROSION CONTROL-INLETS WITH FRAMES AND GRATES

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

EROSION CONTROL-INLETS-1

DETAIL # REVISED 01.2020

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Ryan J. Wright
SOUTH DAKOTA
2025.05.19

WEST SUNNYDALE ROAD RECONSTRUCTION

BOX ELDER,

SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

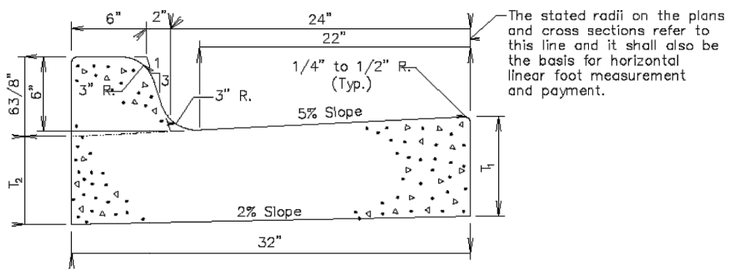
SURVEYED BY: ALL ASPECTS INC.

SURVEY DATE:

SHEET NAME: **DETAILS 7 OF 9**

SHEET NO: **54**

DETAIL RG001-CURB & GUTTER-TYPE B



Type	T_1 (Inches)	T_2 (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	51/16	0.057	17.7
B67	7	61/16	0.065	15.4
B68	8	71/16	0.073	13.7
B68.5	8.5	79/16	0.077	13.0
B69	9	81/16	0.081	12.3
B69.5	9.5	89/16	0.085	11.7
B610	10	91/16	0.090	11.2
B610.5	10.5	99/16	0.094	10.7
B611	11	101/16	0.098	10.2
B611.5	11.5	109/16	0.102	9.8
B612	12	111/16	0.106	9.4

GENERAL NOTES:

When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.

See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

CURB AND GUTTER-CONCRETE-TYPE B

NOT TO SCALE

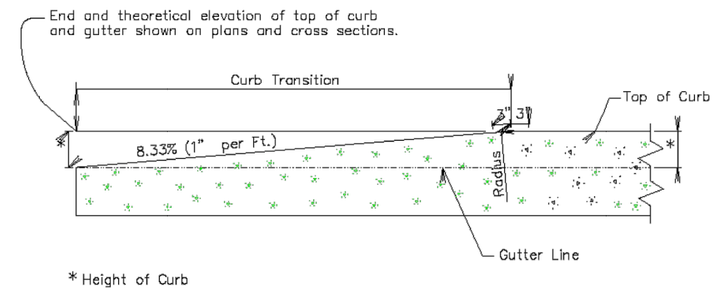
CITY OF BOX ELDER

STANDARD DETAIL

CURB & GUTTER-TYPE B

DETAIL #RG001 REVISED 01.2020

DETAIL RG003-CURB & GUTTER-TAPER



* Height of Curb

LONGITUDINAL SECTION OF CONCRETE CURB TAPER

CURB-CONCRETE-TAPER

NOT TO SCALE

CITY OF BOX ELDER

STANDARD DETAIL

CURB & GUTTER-TAPER

DETAIL #RG004 REVISED 01.2020

TDG

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WEST SUNNYDALE ROAD RECONSTRUCTION

BOX ELDER,

SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020

DESIGNED BY: RW

DRAWN BY: NR

SURVEYED BY: ALL ASPECTS INC.

SURVEY DATE:

SHEET NAME: **DETAILS 8 OF 9**

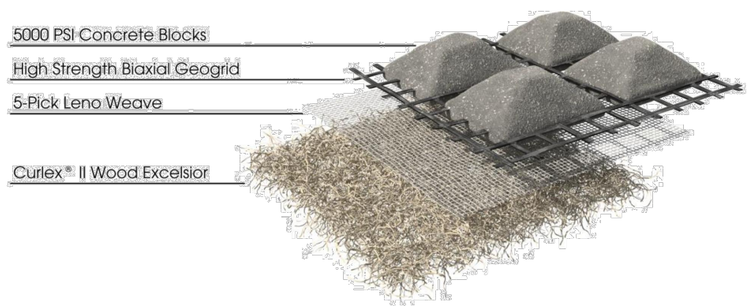
SHEET NO: **55**

Motz Enterprises, Inc.
Office: 513-772-6689
www.Flexamat.com

Composition of Materials – Flexamat Standard

Blocks	5000 PSI, Wet-cast Portland Cement
Interlocking Biaxial Geogrid	Fornit 30/30 – Polypropylene Geogrid with 2,055 lb/ft biaxial strength. Carbon black UV inhibitor shall be blended into the extruded yarns at a rate no less than 0.8% by weight.
Flexamat Standard Underlayment	A three-layered system includes, in order from top to bottom, 1) Concrete block mat 2) 5-Pick Leno Weave and 3) Curlex® II. The underlayment materials shall be packaged within the roll of the Flexamat Standard.

Property	Unit	Test	Requirement
Mass/Unit Area	oz/yd^2	ASTM D5261	6.5 oz/yd^2
Aperture Size	English units	Measured	1.4x 1.4 inch
Ultimate Wide Width Tensile Strength (MD x CMD)	lb/ft	ASTM D6637	2,055 lb/ft
Elongation at Ultimate Tensile Strength (MD x CMD)	%	ASTM D6637	6%
Wide Width Tensile Strength @ 2% (MD x CMD)	lb/ft	ASTM D6637	822 lb/ft
Wide Width Tensile Strength @ 5% (MD x CMD)	lb/ft	ASTM D6637	1,640 lb/ft
Tensile Modulus @ 2% (MD x CMD)	lb/ft	ASTM D6637	41,100 lb/ft
Tensile Modulus @ 5% (MD x CMD)	lb/ft	ASTM D6637	32,800 lb/ft



Manufacturing Values

Flexamat Properties	Values
Roll Width	4', 5.5', 8', 10', 12', 15.5, & 16'
Roll Length	30', 40', 50' / custom
Material Weight	10 lbs./sf
Block Size	6.5" x 6.5" x 2.25"
Percentage Open Area (POA)	30% min.

Performance

Test	Tested Value	Bed Slope	Soil Classification	Limiting Value
ASTM 6460	Shear Stress	30%	Sandy Loam (USDA)	24 PSF
ASTM 6460	Velocity	20%	Loam (USDA)	30 ft./sec

TDG
Towey Design Group, Inc.
147 Chisholm Drive
Box Elder, SD 57719
605.600.3758

LOGO:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 17533
Ryan J. Wright
SOUTH DAKOTA
20250516

WEST SUNNYDALE ROAD RECONSTRUCTION
BOX ELDER,
SOUTH DAKOTA

REVISIONS:

JOB NUMBER: 25-020
DESIGNED BY: RW
DRAWN BY: NR
SURVEYED BY: ALL ASPECTS INC.
SURVEY DATE:

SHEET NAME:
DETAILS 9 OF 9

SHEET NO:
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