CONTRACT

ReBid

For

Daggett County

Dutch John Airport Apron Construction Project

Plan, Specifications and Bid Documents

CIVCO Engineering, Inc.
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P.O. Box 1758
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Daggett County

Dutch John Airport Expansion Project

Table of Contents

I. Proposal Forms

II. Contract

III. Location Map

IV. Equal Opportunity

V. Title VI Appendix A and E

VI. Specifications

VII. Plans

I. Proposal Forms

BID PROPOSAL

Date: February 21, 2023

Daggett County, Utah

The undersigned, after having personally and carefully examined the specifications, plans and form of contract and bond, all of which are made a part hereof, propose to furnish all labor, equipment, tools and machinery, and to furnish and deliver all materials not specifically mentioned as being furnished by the local agency, which are required in and about Daggett County, State of Utah, being the **Daggett County Dutch John Airport Expansion Project**, for approximately the sum of:

Base Bid ONE MILLION EIGHTY THOUSAND TWO HUNDRED EIGHTY Dollars ($ 1,080,280.00)
Additive 1 THREE HUNDRED SIXTY FIVE THOUSAND SEVEN SIXTY SIX Dollars ($ 365,766.00)
Additive 2 ONE HUNDRED THREE THOUSAND SEVEN EIGHTY EIGHT Dollars ($ 103,788.00)

The undersigned further proposes to execute the attached contract within **Ten** days after the date of the award and to complete the project by October 1, 2023.

The undersigned also proposes to furnish bonds as surety, satisfactory to the Daggett County, with the contract. The bond is to be signed by a surety company licensed in Utah and in good standing in the amount equal to the amount of the contract (as determined from bid prices and estimated quantities listed herein) conditioned to ensure that the terms of the contract and the requirements of the specifications will be fully complied with.

The undersigned encloses a certified check, or cash for 5% of bid amount Dollars ($ 5% of bid) (or five percent bid bond in lieu thereof) payable to the order of Daggett County as a guarantee of good faith, and which it is agreed, will be forfeited to the local agency, as liquidated damages in the event of the failure of the undersigned to enter into a contract and furnish satisfactory bonds to the local agency within **Ten** days after Notice of Award.

It is understood that the Daggett County has the right to reject this proposal or to accept it at the following prices:

Contractor:
Staker and Parson Companies dba: Burdick Materials
Company Name

Bidder's Signature

4910822-5501
Contractor's License Number

STAKER & PARSON COMPANIES * CORPORATE Seal * Entity No. 4910822-0142 * UTAH CORPORATION

BID SCHEDULE – Base Bid – Apron and Tiedowns

Item #	Pay Item Number	Pay Item Name	Approx. Qty.	Unit	Unit Cost	Amount
1	C-105	Mobilization	1	Lump	360,000.00	360,000.00
2	152-4.2	Excavation (Plan Quantity)	92	Cu Yd	96.00	8,832.00
3	152-4.3	Borrow (Plan Quantity)	2,864	Cu Yd	56.00	160,384.00
4	154-5.1	Subbase Course (Plan Quantity)	1,176	Cu Yd	98.00	115,248.00
5	160-5.1	Tie Down	7	Each	5000.00	35,000.00
6	209-5.1	Crushed Aggregate Base Course (Plan Quantity)	1,176	Cu Yd	125.00	147,000.00
7	401-8.1	HMA - 1/2 Inch	1,207	Ton	170.00	205,190.00
8	602-5.1	Emulsified Asphalt Prime Coat	6	Ton	1,800.00	10,800.00
9	620-5.1	Runway and Taxiway Marking Paint	4	Gallon	835.00	3,340.00
10	620-5.2	Temporary Runway and Taxiway Marking Paint	2	Gallon	835.00	1,670.00
11	901-5.1	Seeding	64	1000 Sq Ft	57.00	3,648.00
12	905-5.1	Strip, Stockpile and Spread Topsoil (Plan Quantity)	1,176	Cu Yd	18.00	21,168.00
13	908-6.1	HECP Type I	64	1000 Sq Ft	125.00	8,000.00
TOTAL BASE BID – APRON AND TIEDOWNS						1,080,280.00

BID SCHEDULE – Additive 1 - Taxiway

Item #	Pay Item Number	Pay Item Name	Approx. Qty.	Unit	Unit Cost	Amount
1	C-105	Mobilization	1	Lump	21,000.00	21,000.00
2	101-5.1	Removal of Existing Pavement	853	Sq Yd	20.00	17,060.00
3	152-4.1	Drainage Excavation	498	FT	32.00	15,936.00
4	152-4.2	Excavation (Plan Quantity)	81	Cu Yd	96.00	7,776.00
5	152-4.3	Borrow (Plan Quantity)	816	Cu Yd	54.00	44,064.00
6	154-5.1	Subbase Course (Plan Quantity)	488	Cu Yd	96.00	46,848.00
7	209-5.1	Crushed Aggregate Base Course (Plan Quantity)	488	Cu Yd	120.00	58,560.00
8	401-8.1	HMA - 1/2 Inch	500	Ton	170.00	85,000.00
9	602-5.1	Emulsified Asphalt Prime Coat	3	Ton	1700.00	5,100.00
10	620-5.3	Removal of Existing Runway and Taxiway Marking Paint	310	Feet	11.00	3,410.00
11	620-5.1	Runway and Taxiway Marking Paint	5	Gallon	800.00	4,000.00
12	620-5.2	Temporary Runway and Taxiway Marking Paint	2	Gallon	1,400.00	2,800.00
13	701-5.1	Drainage Pipe – 18 Inch, Steel, Silt-Tight	110	Feet	186.00	20,460.00
14	701-5.2	Drainage Pipe – 24 Inch, Steel, Silt-Tight	90	Feet	220.00	19,800.00
15	901-5.1	Seeding	26	1000 Sq Ft	55.00	1,430.00
16	905-5.1	Strip, Stockpile and Spread Topsoil (Plan Quantity)	488	Cu Yd	19.00	9,272.00
17	908-6.1	HECP Type I	26	1000 Sq Ft	125.00	3,250.00
TOTAL ADDITIVE 1 - TAXIWAY						365,766.00
TOTAL BASE BID PLUS ADDITIVE 1						1,446,046.00

BID SCHEDULE – Additive 2 – Additional Apron and Tiedowns

Item #	Pay Item Number	Pay Item Name	Approx. Qty.	Unit	Unit Cost	Amount
1	C-105	Mobilization	1	Lump	16,000.00	16,000.00
2	152-4.2	Excavation (Plan Quantity)	8	Cu Yd	400.00	3,200.00
3	152-4.3	Borrow (Plan Quantity)	145	Cu Yd	54.00	7,830.00
4	154-5.1	Subbase Course (Plan Quantity)	172	Cu Yd	85.00	14,620.00
5	160-5.1	Tie Down	1	Each	4,800.00	4,800.00
6	209-5.1	Crushed Aggregate Base Course (Plan Quantity)	172	Cu Yd	115.00	19,780.00
7	401-8.1	HMA - 1/2 Inch	176	Ton	170.00	29,920.00
8	602-5.1	Emulsified Asphalt Prime Coat	1	Ton	1,700.00	1,700.00
9	620-5.1	Runway and Taxiway Marking Paint	1	Gallon	1,430.00	1,430.00
10	620-5.2	Temporary Runway and Taxiway Marking Paint	1	Gallon	1,430.00	1430.00
11	901-5.1	Seeding	1	1000 Sq Ft	54.00	54.00
12	905-5.1	Strip, Stockpile and Spread Topsoil (Plan Quantity)	172	CU YD	17.00	2,924.00
13	908-6.1	HECP Type I	1	1000 Sq Ft	100.00	100.00
TOTAL ADDITIVE 2 – Additional Apron and Taxiway						103,798.00
TOTAL BASE BID PLUS ADDITIVE 1 PLUS ADDITIVE 2						1,549,834.00

If incorporated, the following information must be given:

Corporation Name Staker and Parson Companies dba: Burdick Materials

By _____

Address PO Box 459 Roosevelt, Utah 84066

State Chartered Under Utah

If partnership, names below:

President _____

Secretary _____

PARSON CO. CORPORATE SEAL Entity No. 4910822-0142 UTAH CORPORATION

II. Contract

CONTRACT

THIS AGREEMENT, made and executed in three (3) original counterparts this _____ day of _____2023, between Daggett County, hereinafter called "local agency" first party, and Staker and Parson Companies dba: Burdick Materials, hereinafter called "Contractor" second party.

WITNESSETH, that for and in consideration of payment, hereinafter mentioned, to be made by the local agency, the Contractor agrees to furnish all labor and equipment, to furnish and deliver all materials not specifically mentioned as being furnished by the local agency, and to do and perform all work on the **Daggett County Dutch John Airport Expansion Project,** in Daggett County, State of Utah, for the approximate sum of One million, Four Hundred Forty Six Thousand, and Forty Six Dollars and No cents. ($ 1,446,046.00) for the Base Bid and Additive 1 and to complete the project by October 1, 2023 and within the specified days allowed in the specifications.

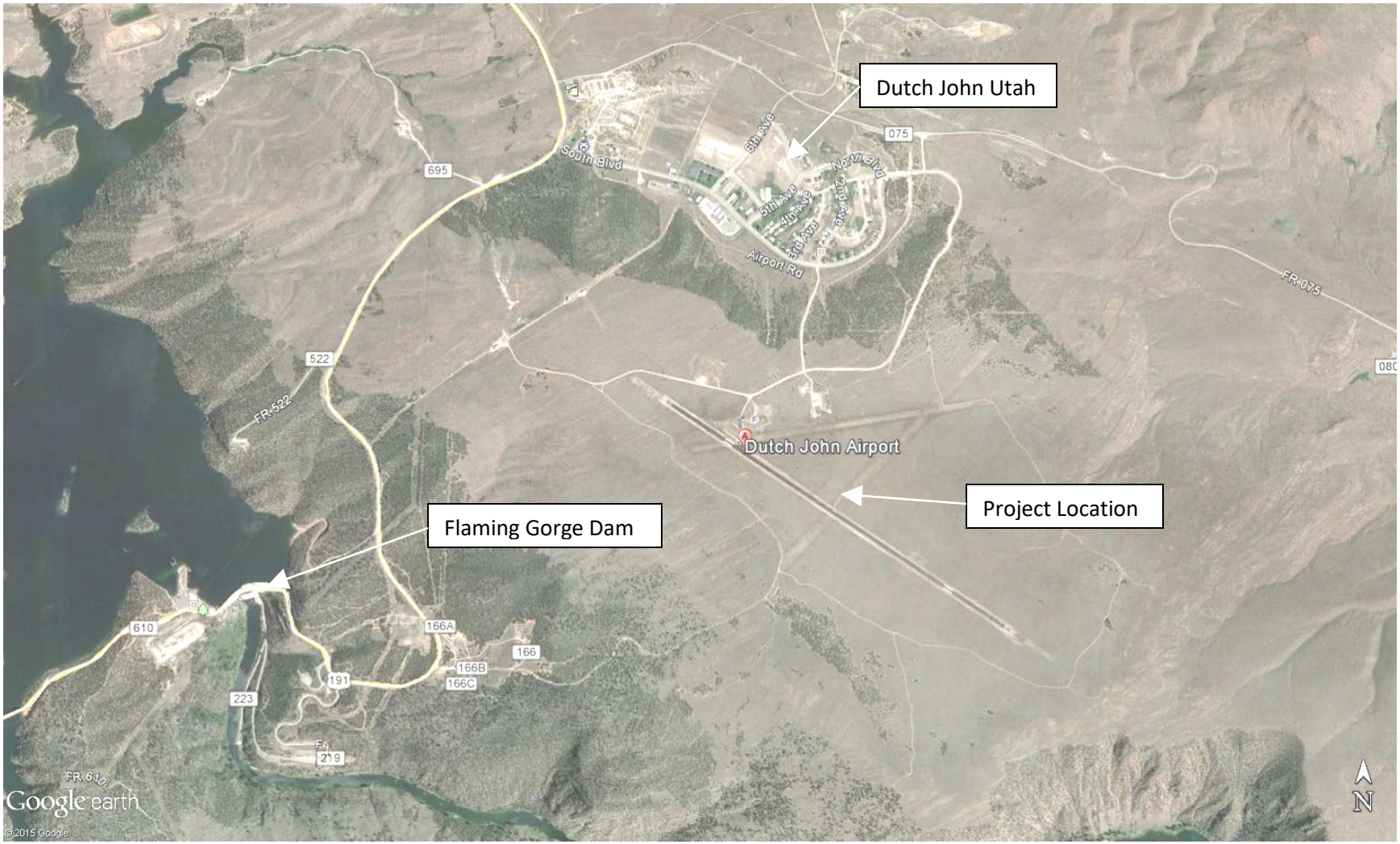
The Contractor further covenants and agrees that all of said work and labor shall be done and performed in the best and most workmanlike manner and in strict conformity with the plans and specifications. The said plans and specifications and the notice to contractors, the proposal, special provisions, and contract bonds are hereby made a part of this agreement as fully and to the same had been set forth at lengths herein.

In consideration of the foregoing promises, Daggett County agrees to pay to the Contractor in the manner and in the amount provided in the said specifications and proposal.

IN WITNESS WHEREOF, the parties here have subscribed their names through their proper officers thereunto duly authorized as of the day and year first written.

Contractor_____	Daggett County
Second Party	First Party
By:_____	By:_____
Title:	Daggett County
ATTEST	ATTEST
By: _____	By:_____

III. Location Map



PROJECT LOCATION MAP

IV. Equal Opportunity

Selection of Subcontractors, Service Providers, Procurement of Materials and Leasing of Equipment:

Do not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

Notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, have equal opportunity to compete for and perform subcontracts that the contractor enters into pursuant to this contract. Use best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Obtain lists of DBE construction firms from SHA personnel.

Use best efforts to ensure subcontractor compliance with their EEO obligations.

Selection of Labor:

During the performance of this contract, do not discriminate against labor from any other State, possession, or territory of the United States.

Employment Practices:

During the performance of this contract, the Contractor agrees as follows:

> Do not discriminate against any employee or applicant for employment because of race, religion, sex, color, national origin, age, or disability. Take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or disability. Such action includes, but is not limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Department of Transportation setting forth the provisions of this nondiscrimination clause.
>
> In all solicitations or advertisements for employees state that all qualified applicants receive consideration for employment without regard to race, religion, sex, color, national origin, age, or disability.

Send to each labor union or representative of workers that the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Department of Transportation advising the said labor union or worker' representative of the commitments under this section and post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further State contracts.

Include the provisions of this Section in every subcontract or purchase order so that such provision will be binding upon each Subcontractor or vendor. Take such action with respect to any subcontract or purchase order as the State Department of Transportation may direct as a means of enforcing such provisions including sanctions for noncompliance.

V. Title VI Appendix A and E

Title VI of the Civil Rights Act of 1964 – Non – Discrimination Notice; Attachment A

NON-DISCRIMINATION NOTICE

In accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C 2000d to 2000d-4 and the Title 49, Code of Federal Regulations. The text below, in its entirety, is in all contracts entered into by UDOT. All of the text except the final section, entitled "Incorporation of Provisions," should be included in any contract entered into by any UDOT contractor.

During the performance of this contract, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

A. COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964 FOR FEDERAL-AID CONTRACTS

1. **Compliance with Regulations:** The contractor shall comply with the Regulation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as regulations), which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, age, disability, income status, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3. **Solicitations for Subcontractors, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, sex, age, disability, income status, or national origin.

4. **Information and Reports:** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the (Recipient) or the (Name of Appropriate Administration) to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the (Recipient), or the (Name of Appropriate Administration) as appropriate, and shall set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the (Recipient) shall impose such contract sanctions as it or the (Name of Appropriate Administration) may determine to be appropriate, including, but not limited to:

   a. Withholding of payments to the contractor under the contract until the contractor complies, and/or

   b. Cancellation, termination or suspension of the contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontractor procurement as the (Recipient) or the (Name of Appropriate Administration) may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with litigation with a subcontractor or supplier as a result of such direction, the contractor may request the (Recipient) to enter into such litigation to protect the interests of the (Recipient), and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Title VI of the Civil Rights Act of 1964 – Non – Discrimination Notice; Attachment E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title Vl of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.,* 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.),* (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.),* as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 610 l*et seq.),* (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether suh programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. §47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-lncome Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

VI. Specifications

Contents

PART 1 – GENERAL CONTRACT PROVISIONS 1
Section 10 Definition of Terms 1
Section 20 Proposal Requirements and Conditions 9
Section 30 Award and Execution of Contract 13
Section 40 Scope of Work 15
Section 50 Control of Work 18
Section 60 Control of Materials 23
Section 70 Legal Regulations and Responsibility to Public 26
Section 80 Execution and Progress 31
Section 90 Measurement and Payment 37
Section 100 Additive Work Bidding 44
PART 2 – GENERAL CONSTRUCTION ITEMS 45
Item C-100 Contractor Quality Control Program (CQCP) 45
Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control 50
Item C-105 Mobilization 53
Item C-110 Method of Estimating Percentage of Material Within Specification Limits (PWL) .. 54
PART 3 – SITEWORK 60
Item P-101 Preparation/Removal of Existing Pavements 60
Item P-152 Excavation, Subgrade, and Embankment 62
Item P-154 Subbase Course 68
Item P-160 Tie Downs 69
PART 4 –BASE COURSES 70
Item P-209 Crushed Aggregate Base Course 70
PART 5 – STABILIZED BASE COURSES – NOT USED 73
PART 6 – FLEXIBLE PAVEMENTS 74
Item P-401 Asphalt Mix Pavement 74
PART 7 – RIGID PAVEMENT - NOT USED 76
PART 8– SURFACE TREATMENTS – NOT USED 77
PART 9– MISCELLANEOUS 78
Item P-602 Emulsified Asphalt Prime Coat 78
Item P-610 Concrete for Miscellaneous Structures 81
Item P-620 Runway and Taxiway Marking 87
PART 10 – FENCING - NOT USED 92
PART 11 – DRAINAGE 93
Item D-701 Pipe for Storm Drains and Culverts 93
PART 12 – TURFING 97
Item T-901 Seeding 97
Item T-905 Topsoil 101
Item T-908 Hydraulic Erosion Control Products 103
PART 13 – LIGHTING INSTALLATION – NOT USED 107

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Part 1 – General Contract Provisions

Section 10 Definition of Terms

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	**AASHTO**	The American Association of State Highway and Transportation Officials.
10-02	**Access Road**	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	**Advertisement**	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	**Airport**	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	**Airport Improvement Program (AIP)**	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	**Air Operations Area (AOA)**	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	**Apron**	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	**ASTM International (ASTM)**	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	**Award**	The Owner's notice to the successful bidder of the acceptance of the submitted bid.

Paragraph Number	Term	Definition
10-10	**Bidder**	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	**Building Area**	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	**Calendar Day**	Every day shown on the calendar.
10-13	**Certificate of Analysis (COA)**	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	**Certificate of Compliance (COC)**	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	**Change Order**	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	**Contract**	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	**Contract Item (Pay Item)**	A specific unit of work for which a price is provided in the contract.
10-18	**Contract Time**	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.

Paragraph Number	Term	Definition
10-19	**Contractor**	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	**Contractors Quality Control (QC) Facilities**	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	**Contractor Quality Control Program (CQCP)**	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	**Control Strip**	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	**Construction Safety and Phasing Plan (CSPP)**	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
10-24	**Drainage System**	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	**Engineer**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	**Equipment**	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	**Extra Work**	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.

Paragraph Number	Term	Definition
10-28	**FAA**	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	**Federal Specifications**	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	**Force Account**	**a.** Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. **b.** Owner Force Account - Work performed for the project by the Owner's employees.
10-31	**Intention of Terms**	Whenever, in these specifications or on the plans, the words “directed,” “required,” “permitted,” “ordered,” “designated,” “prescribed,” or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words “approved,” “acceptable,” “satisfactory,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner. Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.
10-32	**Lighting**	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	**Major and Minor Contract Items**	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	**Materials**	Any substance specified for use in the construction of the contract work.

Paragraph Number	Term	Definition
10-35	**Modification of Standards (MOS)**	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	**Notice to Proceed (NTP)**	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	**Owner**	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is **Daggett County**
10-38	**Passenger Facility Charge (PFC)**	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	**Pavement Structure**	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	**Payment bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	**Performance bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	**Plans**	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	**Project**	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	**Proposal**	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

Paragraph Number	Term	Definition
10-45	**Proposal guaranty**	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	**Quality Assurance (QA)**	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	**Quality Control (QC)**	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	**Quality Assurance (QA) Inspector**	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	**Quality Assurance (QA) Laboratory**	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	**Resident Project Representative (RPR)**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	**Runway**	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	**Runway Safety Area (RSA)**	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	**Safety Plan Compliance Document (SPCD)**	Details how the Contractor will comply with the CSPP.
10-54	**Specifications**	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.

Paragraph Number	Term	Definition
10-55	**Sponsor**	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	**Structures**	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	**Subgrade**	The soil that forms the pavement foundation.
10-58	**Superintendent**	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	**Supplemental Agreement**	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%: (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	**Surety**	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	**Taxilane**	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	**Taxiway**	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	**Taxiway/Taxilane Safety Area (TSA)**	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.

Paragraph Number	Term	Definition
10-64	**Work**	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	**Working day**	A working day shall be any calendar day other than a legal holiday as spelled out in the definition of a Holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Days when the Engineer determines that inclement weather or adverse conditions prevents the contractor from working for at least 50 percent of the normal workday will not be counted as a workday. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days. Contractor shall not perform work on Sundays or holidays without permission from the Engineer.
10-66	**Plan Quantity**	A designer generated quantity for a portion of the work designated as the pay quantity for the contract.
10-67	**HECP**	Hydraulic Erosion Control Products – Biodegradable manufactured thermally processed natural or reinforced interlocking fibers and pre-mixed with a tackifier.
10-68	**DEQ**	Utah Depart of Environmental Quality
10-69	**Untreated Base Couse (UTBC)**	Crushed Aggregate Base Course
10-70	**Granular Borrow**	Subbase Course
10-71	**Borrow**	Imported material for use in a constructed fill or backfill
10-72	**HMA**	Asphalt Surface Course
10-73	**Holiday**	Memorial Day: May 26, 2023 through May 29, 2023 July 4th: June 30, 2023 through July 4, 2023 July 24th: July 21, 2023 through July 24, 2023 Labor Day: Sept. 1, 2023 through Sept. 4, 2023

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders).

Sealed proposals will be received by the Daggett County Clerk, 95 North 1st West (PO Box 400); Manila, Utah, 84046 until 10:00 a.m., February 21, 2023, for the Dutch John Airport Apron Construction Project in Daggett County. Electronic submittals of the proposal will not be accepted. The Contractor is responsible for ensuring that their proposal is delivered on time. Bids will be addressed to Brian Raymond, County Clerk and clearly state "Bid for Dutch John Airport Apron Construction Project" on the cover.

The project consists of:

- a base bid that involves constructing approximate 50,000 square feet of airport apron and14,000 square feet of taxiway,
- Additive 1 that involves constructing approximately 26,000 square feet of taxiway, and
- Additive 2 that involves constructing approximately 9,000 square feet of additional airport apron.

The project consists of using UDOT HMA, striping, aircraft tiedowns, pipes, and other associated work. The project is to be completed by October 1, 2023.

Proposal forms, plans, and specifications are on file and may be examined at the following locations:

Daggett County Court House, 95 North 100 West, Manila, Utah, 84046

CIVCO Engineering, Inc., 1256 West 400 South Suite 1, Vernal, Utah 84078

Phone 1-435-789-5448

Specifications, bid forms, and plans may be obtained only from CIVCO Engineering, Inc., at the above location upon payment of $50.00, no part of which will be refunded or electronically at no charge. A geotechnical report is available from CIVCO at the request of the contractor.

Each bidder must submit a bid bond from an approved surety company licensed in Utah and in good standing on forms provided by the surety company; or in lieu thereof, cash, certified check, or cashier's check for not less than 5% of the total amount of the bid, made payable to Daggett County as evidence of good faith and a guarantee that if awarded the contract, the bidder will execute the contract and finish the contract bonds as required.

Bids will be publicly opened during the County Commission meeting on February 21, 2023. Daggett County reserves the right to reject any and or all bids.

20-02 Qualification of bidders. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial

responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

20-03 Contents of proposal forms. The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

Mobilization is limited to 10 percent of the total project cost.

20-04 Issuance of proposal forms. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:

a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.

b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.

c. Documented record of Contractor default under previous contracts with the Owner.

d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

20-06 Examination of plans, specifications, and site. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves to the character, quality, and quantities of work to be performed, materials to be furnished, and to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from their own examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

20-07 Preparation of proposal. The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) in numerals which they propose for each pay item furnished in the proposal. Prices should be written in whole dollars and cents. The extended total amount of each item should not be rounded. In the case of conflict between the unit price and the extended price, the unit price, unless obviously incorrect, shall govern.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

20-08 Responsive and responsible bidder. A responsive bid conforms to all significant terms and conditions contained in the Owner's invitation for bid. It is the Owner's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR § 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.

b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.

c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

d. If the proposal contains unit prices that are obviously unbalanced.

e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 Bid guarantee. Each separate proposal shall be accompanied by a bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

20-11 Delivery of proposal. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for receiving all bids. Proposals received after the bid opening time shall be returned to the bidder unopened. It is the bidder's responsibility to verify that all mailed or hand delivered are received by the time and date stipulated. The time will be as determined by the County Clerks cell phone time.

20-12 Withdrawal or revision of proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is

received by the Owner in writing by fax, email or in person before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-13 Public opening of proposals. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 Disqualification of bidders. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, *Issuance of Proposal Forms,* of this section.

20-15 Discrepancies and Omissions. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than 7 calendar days prior to bid opening.

Any interpretation of the project bid documents by the Owner's Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

END OF SECTION 20

Section 30 Award and Execution of Contract

30-01 Consideration of proposals. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit bid price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made within **30** calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

30-03 Cancellation of award. The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with paragraph 30-07 *Approval of Contract*.

30-04 Return of proposal guaranty. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals.* Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds.*

30-05 Requirements of contract bonds. At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or performance and payment bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds,* of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder.

30-07 Approval of contract. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance

with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in paragraph 30-06, *Execution of Contract,* of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

END OF SECTION 30

Section 40 Scope of Work

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 Alteration of work and quantities. The Owner reserves the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

40-03 Omitted items. The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with Section 90, paragraph 90-04, *Payment for Omitted Items*.

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available

to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

40-05 Maintenance of traffic. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*. Lighting the runway closure "X''s is not required.

b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP).

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (http://mutcd.fhwa.dot.gov/), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways.

40-06 Removal of existing structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Resident Project Representative (RPR) shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines,

grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,

b. Remove such material from the site, upon written approval of the RPR; or

c. Use such material for the Contractor's own temporary construction on site; or,

d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the RPR's approval in advance of such use.

Should the RPR approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at their expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the RPR approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 Final cleanup. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of the property Owner.

END OF SECTION 40

Section 50 Control of Work

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

50-02 Conformity with plans and specifications. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans, or specifications.

If the RPR finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications, but that the portion of the work affected will, in their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the RPR's written orders.

The term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the RPR's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 Coordination of contract, plans, and specifications. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

50-04 List of Special Provisions. Not Used

50-05 Cooperation of Contractor. The Contractor shall be supplied with two hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the RPR and their inspectors and with other Contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as their agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the RPR or their authorized representative.

50-06 Cooperation between Contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with their own contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-07 Construction layout and stakes. The Engineer/RPR shall establish necessary horizontal and vertical control. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. The reestablishment of survey control shall be by a State Licensed Land Surveyor. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be

provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): hard copy or electronic files.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 Authority and duties of Quality Assurance (QA) inspectors. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done

without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 Failure to maintain the work. Should the Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, the RPR shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

50-14 Partial acceptance. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the

work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

Section 60 Control of Materials

60-01 Source of supply and quality requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

A copy of all Contractor QC test data shall be provided to the RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

The Contractor shall employ a Quality Control (QC) testing organization to perform all Contractor required QC tests in accordance with Item C-100 Contractor Quality Control Program (CQCP).

60-03 Certification of compliance/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

a. Conformance to the specified performance, testing, quality or dimensional requirements; and,

b. Suitability of the material or assembly for the use intended in the contract work.

The RPR shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant inspection. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.

b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer/ Resident Project Representative (RPR) field office. An Engineer/RPR field office is not required.

60-06 Storage of materials. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The

Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the RPR has approved its use in the work.

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others.

The Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

70-05 Federal Participation. Not used.

70-06 Sanitary, health, and safety provisions. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic,* and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet CS-01 of the project plans.

70-09 Use of explosives. The use of explosives is not permitted on this project.

70-10 Protection and restoration of property and landscape. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such "phasing" of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

The Contractor shall complete the construction of the new taxiway and apron prior to removing the existing taxiway.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent

in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's responsibility for work. Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's responsibility for utility service and facilities of others. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the RPR and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 No waiver of legal rights. Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

70-19 Environmental protection. The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not

contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work,* and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements.

1. Workers' Compensation Insurance
   a. Provide Workers' Compensation Insurance to cover full liability. Comply with the statutory limits defined by the State of Utah as a minimum.
2. General Liability Insurance
   a. Provide General Liability insurance with the following minimum limits of liability:
      1) $1 million Bodily Injury and Property Damage – Each Accident
      2) $3 million General Aggregate
      3) $3 million Products and Complete Operations Annual Aggregate
3. Automobile Liability Insurance
   a. Provide Automobile Liability Insurance for claims arising from the ownership, maintenance, or use of motor vehicles involved in project work with the following minimum limits:
      1) $1 million combined single limit bodily injury and property damage per occurrence.
4. All liability policies should be written on an Occurrence form or if written on a Claims made form all such policies must be maintained for a period of not less than one year from the date of completion of the project.
5. Provide certificates of insurance showing that they are covered as required before entering the project site or beginning project work and at any time during the project at the request of Daggett County.

END OF SECTION 70

Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least 25 percent of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

The Contractor shall provide copies of all subcontracts to the RPR 14 **days prior to being utilized on the project. As a minimum, the information shall include the following:**

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners will issue the Notice to Proceed once the Contractor provides the appropriate insurance and signs the contract. The Contractor shall not commence any actual operations prior to the date on which the Notice to Proceed is issued by the Owner. The Contractor shall notify the RPR at least 7 days in advance of when construction operations will begin. Time changes to the project will commence the first day the Contractor begins work on the project. Mobilization to the project will not be charged as a workday.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall minimize to the extent possible the time the airport is to be closed. The Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

To construct taxiway near runway and to apply temporary and permanent markings on runway for new taxiway.

To remove existing taxiway near runway and to remove markings from existing taxiway from runway.

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The number of working shall be stated in the proposal and contract and shall be known as the Contract Time.

If the contract time requires extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

80-07.1 Contract time based on working days. Contract time based on working days shall be calculated weekly by the Resident Project Representative (RPR). The RPR will furnish the Contractor a copy of their weekly statement of the number of working days charged against the contract time during the week and the number of working days currently specified for completion of the contract (the original contract time plus the number of working days, if any, that have been included in approved Change Orders or Supplemental Agreements covering Extra Work).

The weekly statement of contract time charged is based on the following considerations:

(1) Time will be charged for days on which the Contractor could proceed with scheduled work under construction at the time for at least six (6) hours with the normal work force employed on such items. When normal work force is a double-shift, use 12 hours; and when the normal work force is on a triple-shift, use 18 hours. Conditions beyond the Contractor's control such as strikes, lockouts, unusual delays in transportation, temporary suspension of the scheduled work items under construction or temporary suspension of the entire work which have been ordered by the Owner for reasons not the fault of the Contractor, shall not be charged against the contract time.

(2) The RPR will not make charges against the contract time prior to the effective date of the notice to proceed.

(3) The RPR will begin charges against the contract time on the first working day after the effective date of the notice to proceed.

(4) The RPR will not make charges against the contract time after the date of final acceptance as defined in Section 50, paragraph 50-14, *Final Acceptance*.

(5) The Contractor will be allowed one (1) week in which to file a written protest setting forth their own objections to the RPR's weekly statement. If no objection is filed within such specified time, the weekly statement shall be considered as acceptable to the Contractor.

The contract time (stated in the proposal) is based on the originally estimated quantities as described in the Section 20, paragraph 20-05, *Interpretation of Estimated Proposal Quantities*. Should the satisfactory completion of the contract require performance of work in greater quantities than those estimated in the proposal, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in contract time shall not consider either the cost of work or the extension of contract time that has been covered by change order or supplemental agreement and shall be made at the time of final payment.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional

engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract or by the completion date stipulated in the Notice to Bidders and in the Contract.

Segment	Description	Liquidated Damages Cost	Allowed Construction Time – Working Days
1	All work but seeding and HECP	$2,500	45
2	Seeding and HECP	$2,500	2
Additive 1	All work in Additive 1 minus seeding and HECP	$2,500	5
Additive 2	All work in Additive 2 minus seeding and HECP	$2,500	5

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or

c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

d. Discontinues the execution of the work, or

e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or

h. Makes an assignment for the benefit of creditors, or

i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

Section 90 Measurement and Payment

90-01 Measurement of quantities. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term "ton" will mean the short ton consisting of 2,000 pounds (907 km) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and

Term	Description
	accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (km).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end. Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted. In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials

Term	Description
	received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%. In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them. Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment. All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.
Rental Equipment	Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 *Payment for Extra Work*.
Pay Quantities	When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.
Plan Quantities	When the item for a specific portion of the work is designated as "Plan Quantity" the calculated quantity in the Bidding Schedule is the quantity for which payment will be made. An adjustment to the final quantity for payment may be made if an error is discovered by either the RPR or the Contractor.in the calculated quantity or if the amount of work called forth in the plans is adjusted. If the Contractor determines there is an error in the quantity shown in the project the Contractor must bring this error to the RPR prior to beginning work on the item and must supply supporting documentation as necessary for the RPR to evaluate the quantity issue.

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the "basis of payment" subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities,* will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items,* the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the RPR omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the RPR's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the RPR's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the RPR's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 Payment for extra work. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, **10%** percent of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.

b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

90-08 Payment of withheld funds. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes,* or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material,

workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The Owner will notify the Contractor, in writing, within 14 days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 30 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Contractor Final Project Documentation. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the RPR approves the Contractor's final submittal. The Contractor shall:

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.

c. Complete all punch list items identified during the Final Inspection.

d. Provide complete release of all claims for labor and material arising out of the Contract.

e. Manufacturer's certifications for all items incorporated in the work.

f. All required record drawings, as-built drawings or as-constructed drawings.

g. Security for Construction Warranty.

END OF SECTION 90

Section 100 Additive Work Bidding

100-01 Consideration of Additives. The County has a set budget for this project and intends to award the maximum amount of work within that budget. The County reserves the right to add additional funding to the project. Any proposal submitted without prices in the base bid and the additives will be considered non-responsive.

100-01 Items. The Additive Bid Schedules contains the items included in the additives. Additional time is provided for the additives as presented in Section 80-08.

100-03. Proposal Evaluation. The County awards the base and the additives within the available funds or may seek additional funding to award a bid over the available funds.

If all bid proposals for the base bid plus the additives are greater than available funds, then the County will determine if they want to add additional funds to the project to award the base bid and which additive they want to include in the project.

If the County decides not to provide additional funds, the additives are excluded from further consideration and the contractor with the lowest base bid total will be awarded the project or all proposals will be rejected.

Part 2 – General Construction Items

Item C-100 Contractor Quality Control Program (CQCP)

100-1 General. Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish and maintain an effective Contractor Quality Control Program (CQCP) that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the quality assurance (QA) testing. QA testing is the responsibility of the Engineer and will follow the Utah Department of Transportation Minimum Sampling and Testing requirements.

100-2 Description of program.

a. General description. The Contractor shall establish a CQCP to perform QC inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. The CQCP shall ensure conformance to applicable specifications and plans with respect to materials, off-site fabrication, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.

b. QC technicians. A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.

The QC technicians shall perform the following functions:

(1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.

(2) Performance of all QC tests as required by the technical specifications and paragraph100-8.

(3) Performance of tests for the RPR when required by the technical specifications.

Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

100-4 Project progress schedule. Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, *Execution and Progress*.

100-5 Submittals schedule. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

a. Specification item number

b. Item description

c. Description of submittal

d. Specification paragraph requiring submittal

e. Scheduled date of submittal

100-6 Inspection requirements. QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-9.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

a. During plant operation for material production, QC test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition.

b. During field operations, QC test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified.

100-7 Contractor QC testing facility.

a. The Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, *Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials*:

- 8.1.3 Equipment Calibration and Checks;
- 8.1.9 Equipment Calibration, Standardization, and Check Records;
- 8.1.12 Test Methods and Procedures

100-8 QC testing plan. As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes. The testing plan will conform at a minimum to the Utah Department of Transportation Minimum Sampling and Testing requirements. If a conflict exists between these specifications and the Utah Department of Transportation Minimum Sampling and Testing requirements the stricter of the two will override the other or as determined by the RPR.

The QC testing plan shall contain a statistically based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The RPR shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-9.

100-9 Documentation. The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or

tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the RPR daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCPA.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily inspection reports. Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

(1) Technical specification item number and description

(2) Compliance with approved submittals

(3) Proper storage of materials and equipment

(4) Proper operation of all equipment

(5) Adherence to plans and technical specifications

(6) Summary of any necessary corrective actions

(7) Safety inspection.

(8) Photographs and/or video

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and the CQCPA. The RPR shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results must be archived.

b. Daily test reports. The Contractor shall be responsible for establishing a system that will record all QC test results. Daily test reports shall document the following information:

(1) Technical specification item number and description

(2) Test designation

(3) Location

(4) Date of test

(5) Control requirements

(6) Test results

(7) Causes for rejection

(8) Recommended remedial actions

(9) Retests

Test results from each day's work period shall be submitted to the RPR prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically, the results must be archived.

100-10 Corrective action requirements. The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

100-11 Inspection and/or observations by the RPR. All items of material and equipment are subject to inspection and/or observation by the RPR at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to inspection and/or observation by the RPR at the site for the same purpose.

Inspection and/or observations by the RPR does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

100-12 Noncompliance.

a. The Resident Project Representative (RPR) will provide written notice to the Contractor of any noncompliance with their CQCP. After receipt of such notice, the Contractor must take corrective action.

b. When QC activities do not comply with either the CQCP or the contract provisions or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the RPR will recommend the Owner take the following actions:

(1) Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors and/or

(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

METHOD OF MEASUREMENT

100-13 Basis of measurement and payment. Not Used

BASIS OF PAYMENT

100-14 Payment - Incidental to other items of work

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

National Institute for Certification in Engineering Technologies (NICET)

ASTM International (ASTM)

ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

END OF ITEM C-100

Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control

DESCRIPTION

102-1. This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, and other erosion control devices or methods as determined by the Contractor and approved by the RPR and DEQ.

Temporary erosion control shall be in accordance with the approved erosion control plan; and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

MATERIALS

102-2.1 Grass. Grass that will not compete with the grasses sown later for permanent cover per Item T-901shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 Mulches. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 Utah Pollutant Discharge Elimination System, Utah Construction General Permit (UCGP). Prior to the start of construction, the Contractor shall prepare and submit a Notice of Intent (NOI) application to the DEQ which includes preparing, submitting, and maintaining a Storm Water Pollution and Prevention Plan (SWPPP). The approved NOI must be submitted to the RPR prior to starting work. Prior to final payment the Contractor shall prepare and submit a Notice of Termination (NOT) to the DEQ and provide an approved copy to the RPR.

102-3.3 Schedule. Prior to the start of construction, the Contractor shall submit schedules showing how the work will be completed in accordance with the plans and showing the establishment of temporary and permanent erosion control work, for grading; construction and paving. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.4 Construction details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.5 Installation, maintenance and removal of silt fence. Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled, and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33 *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461 *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

Item C-105 Mobilization

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. NA

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; and DOL "Notice to All Employees" Poster. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. – Not used

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. With first pay request, 25%.

b. When 25% or more of the original contract is earned, an additional 25%.

c. When 50% or more of the original contract is earned, an additional 40%.

d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation,* the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item C-105 Mobilization

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

END OF ITEM C-105

Item C-110 Method of Estimating Percentage of Material Within Specification Limits (PWL)

110-1 General. When the specifications provide for acceptance of material based on the method of estimating percentage of material within specification limits (PWL), the PWL will be determined in accordance with this section. All test results for a lot will be analyzed statistically to determine the total estimated percent of the lot that is within specification limits. The PWL is computed using the sample average (X) and sample standard deviation (S_n) of the specified number (n) of sublots for the lot and the specification tolerance limits, L for lower and U for upper, for the particular acceptance parameter. From these values, the respective Quality index, Q_L for Lower Quality Index and/or Q_U for Upper Quality Index, is computed and the PWL for the lot for the specified n is determined from Table 1. All specification limits specified in the technical sections shall be absolute values. Test results used in the calculations shall be to the significant figure given in the test procedure.

There is some degree of uncertainty (risk) in the measurement for acceptance because only a small fraction of production material (the population) is sampled and tested. This uncertainty exists because all portions of the production material have the same probability to be randomly sampled. The Contractor's risk is the probability that material produced at the acceptable quality level is rejected or subjected to a pay adjustment. The Owner's risk is the probability that material produced at the rejectable quality level is accepted.

It is the intent of this section to inform the Contractor that, in order to consistently offset the Contractor's risk for material evaluated, production quality (using population average and population standard deviation) must be maintained at the acceptable quality specified or higher. In all cases, it is the responsibility of the Contractor to produce at quality levels that will meet the specified acceptance criteria when sampled and tested at the frequencies specified.

110-2 Method for computing PWL. The computational sequence for computing PWL is as follows:

a. Divide the lot into n sublots in accordance with the acceptance requirements of the specification.

b. Locate the random sampling position within the sublot in accordance with the requirements of the specification.

c. Make a measurement at each location, or take a test portion and make the measurement on the test portion in accordance with the testing requirements of the specification.

d. Find the sample average (X) for all sublot test values within the lot by using the following formula:

$$\mathbf{X = (x_1 + x_2 + x_3 + \ldots x_n) / n}$$

Where: X = Sample average of all sublot test values within a lot

$x_1, x_2, \ldots x_n$ = Individual sublot test values

n = Number of sublot test values

e. Find the sample standard deviation (S_n) by use of the following formula:

$$\mathbf{S_n = [(d_1^2 + d_2^2 + d_3^2 + \ldots d_n^2)/(n-1)]^{1/2}}$$

Where: S_n = Sample standard deviation of the number of sublot test values in the set

$d_1, d_2, \ldots d_n$ = Deviations of the individual sublot test values $x_1, x_2, \ldots$ from the average value X

that is: $d_1 = (x_1 - X)$, $d_2 = (x_2 - X)$ … $d_n = (x_n - X)$

n = Number of sublot test values

f. For single sided specification limits (i.e., L only), compute the Lower Quality Index Q_L by use of the following formula:

$$\mathbf{Q_L = (X - L) / S_n}$$

Where: L = specification lower tolerance limit

Estimate the percentage of material within limits (PWL) by entering Table 1 with Q_L, using the column appropriate to the total number (n) of measurements. If the value of Q_L falls between values shown on the table, use the next higher value of PWL.

g. For double-sided specification limits (i.e., L and U), compute the Quality Indexes Q_L and Q_U by use of the following formulas:

$$\mathbf{Q_L = (X - L) / S_n}$$
and
$$\mathbf{Q_U = (U - X) / S_n}$$

Where: L and U = specification lower and upper tolerance limits

Estimate the percentage of material between the lower (L) and upper (U) tolerance limits (PWL) by entering Table 1 separately with Q_L and Q_U, using the column appropriate to the total number (n) of measurements, and determining the percent of material above P_L and percent of material below P_U for each tolerance limit. If the values of Q_L fall between values shown on the table, use the next higher value of P_L or P_U. Determine the PWL by use of the following formula:

$$\mathbf{PWL = (P_U + P_L) - 100}$$

Where: P_L = percent within lower specification limit

P_U = percent within upper specification limit

EXAMPLE OF PWL CALCULATION

Project: Example Project

Test Item: Item P-401, Lot A.

A. PWL Determination for Mat Density.

1. Density of four random cores taken from Lot A.

A-1 = 96.60

A-2 = 97.55

A-3 = 99.30

A-4 = 98.35

n = 4

2. Calculate average density for the lot.

$X = (x_1 + x_2 + x_3 + \ldots x_n) / n$

$X = (96.60 + 97.55 + 99.30 + 98.35) / 4$
$X = 97.95\%$ density

3. Calculate the standard deviation for the lot.

$S_n = [((96.60 - 97.95)^2 + (97.55 - 97.95)^2 + (99.30 - 97.95)^2 + (98.35 - 97.95)^2)) / (4 - 1)]^{1/2}$
$S_n = [(1.82 + 0.16 + 1.82 + 0.16) / 3]^{1/2}$
$S_n = 1.15$

4. Calculate the Lower Quality Index Q_L for the lot. (L=96.3)

$Q_L = (X - L) / S_n$
$Q_L = (97.95 - 96.30) / 1.15$
$Q_L = 1.4348$

5. Determine PWL by entering Table 1 with $Q_L = 1.44$ and n= 4.

PWL = 98

B. PWL Determination for Air Voids.

1. Air Voids of four random samples taken from Lot A.

A-1 = 5.00
A-2 = 3.74
A-3 = 2.30
A-4 = 3.25

2. Calculate the average air voids for the lot.

$X = (x_1 + x_2 + x_3 \ldots n) / n$
$X = (5.00 + 3.74 + 2.30 + 3.25) / 4$
$X = 3.57\%$

3. Calculate the standard deviation S_n for the lot.

$S_n = [((3.57 - 5.00)^2 + (3.57 - 3.74)^2 + (3.57 - 2.30)^2 + (3.57 - 3.25)^2) / (4 - 1)]^{1/2}$
$S_n = [(2.04 + 0.03 + 1.62 + 0.10) / 3]^{1/2}$
$S_n = 1.12$

4. Calculate the Lower Quality Index Q_L for the lot. (L= 2.0)

$Q_L = (X - L) / S_n$
$Q_L = (3.57 - 2.00) / 1.12$
$Q_L = 1.3992$

5. Determine P_L by entering Table 1 with $Q_L = 1.41$ and n = 4.

$P_L = 97$

6. Calculate the Upper Quality Index Q_U for the lot. (U= 5.0)

$Q_U = (U - X) / S_n$
$Q_U = (5.00 - 3.57) / 1.12$
$Q_U = 1.2702$

7. Determine P_U by entering Table 1 with $Q_U = 1.29$ and n = 4.

$P_U = 93$

8. Calculate Air Voids PWL

$PWL = (P_L + P_U) - 100$

$PWL = (97 + 93) - 100 = 90$

EXAMPLE OF OUTLIER CALCULATION (REFERENCE ASTM E178)

Project: Example Project

Test Item: Item P-401, Lot A.

A. Outlier Determination for Mat Density.

1. Density of four random cores taken from Lot A arranged in descending order.

A-3 = 99.30
A-4 = 98.35
A-2 = 97.55
A-1 = 96.60

2. From ASTM E178, Table 1, for n=4 an upper 5% significance level, the critical value for test criterion = 1.463.

3. Use average density, standard deviation, and test criterion value to evaluate density measurements.

a. For measurements greater than the average:

If (measurement - average)/(standard deviation) is less than test criterion, then the measurement is not considered an outlier.

For A-3, check if (99.30 - 97.95) / 1.15 is greater than 1.463.

Since 1.174 is less than 1.463, the value is not an outlier.

b. For measurements less than the average:

If (average - measurement)/(standard deviation) is less than test criterion, then the measurement is not considered an outlier.

For A-1, check if (97.95 - 96.60) / 1.15 is greater than 1.463.

Since 1.435 is less than 1.463, the value is not an outlier.

Note: In this example, a measurement would be considered an outlier if the density were:

Greater than (97.95 + 1.463 × 1.15) = 99.63%

OR

less than (97.95 - 1.463 × 1.15) = 96.27%.

Table 1. Table for Estimating Percent of Lot Within Limits (PWL)

Percent Within Limits (P_L and P_U)	Positive Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520	1.9994	2.0362
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053	1.8379	1.8630
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993	1.7235	1.7420
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127	1.6313	1.6454
95	01.1405	1.3500	1.4407	1.4887	1.5181	1.5381	1.5525	1.5635

Table 1. Table for Estimating Percent of Lot Within Limits (PWL)

Percent Within Limits (P_L and P_U)	Positive Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4717	1.4829	1.4914
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112	1.4199	1.4265
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554	1.3620	1.3670
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032	1.3081	1.3118
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541	1.2576	1.2602
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075	1.2098	1.2115
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630	1.1643	1.1653
87	1.0597	1.1100	1.1173	1.1192	1.1199	1.1204	1.1208	1.1212
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794	1.0791	1.0789
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399	1.0389	1.0382
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015	1.0000	0.9990
83	0.9939	0.9900	0.9785	0.9715	0.9671	0.9643	0.9624	0.9610
82	0.9749	0.9600	0.9452	0.9367	0.9315	0.9281	0.9258	0.9241
81	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928	0.8901	0.8882
80	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583	0.8554	0.8533
79	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245	0.8214	0.8192
78	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915	0.7882	0.7858
77	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590	0.7556	0.7531
76	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271	0.7236	0.7211
75	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958	0.6922	0.6896
74	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649	0.6613	0.6587
73	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344	0.6308	0.6282
72	0.7360	0.6600	0.6316	0.6176	0.6095	0.6044	0.6008	0.5982
71	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747	0.5712	0.5686
70	0.6787	0.6000	0.5719	0.5582	0.5504	0.5454	0.5419	0.5394
69	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164	0.5130	0.5105
68	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877	0.4844	0.4820
67	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592	0.4560	0.4537
66	0.5563	0.4800	0.4545	0.4424	0.4355	0.4310	0.4280	0.4257
65	0.5242	0.4500	0.4255	0.4139	0.4073	0.4030	0.4001	0.3980
64	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753	0.3725	0.3705
63	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477	0.3451	0.3432
62	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203	0.3179	0.3161
61	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931	0.2908	0.2892
60	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660	0.2639	0.2624
59	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391	0.2372	0.2358
58	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122	0.2105	0.2093
57	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855	0.1840	0.1829
56	0.2164	0.1800	0.1688	0.1636	0.1607	0.1588	0.1575	0.1566
55	0.1806	0.1500	0.1406	0.1363	0.1338	0.1322	0.1312	0.1304
54	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057	0.1049	0.1042
53	0.1087	0.0900	0.0843	0.0817	0.0802	0.0793	0.0786	0.0781
52	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528	0.0524	0.0521
51	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264	0.0262	0.0260
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Percent Within Limits (P_L and P_U)	Negative Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
49	-0.0363	-0.0300	-0.0281	-0.0272	-0.0267	-0.0264	-0.0262	-0.0260
48	-0.0725	-0.0600	-0.0562	-0.0544	-0.0534	-0.0528	-0.0524	-0.0521
47	-0.1087	-0.0900	-0.0843	-0.0817	-0.0802	-0.0793	-0.0786	-0.0781
46	-0.1447	-0.1200	-0.1125	-0.1090	-0.1070	-0.1057	-0.1049	-0.1042

Percent Within Limits (P_L and P_U)	Negative Values of Q (Q_L and Q_U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
45	-0.1806	-0.1500	-0.1406	-0.1363	-0.1338	-0.1322	-0.1312	-0.1304
44	-0.2164	-0.1800	-0.1688	-0.1636	-0.1607	-0.1588	-0.1575	-0.1566
43	-0.2519	-0.2100	-0.1971	-0.1911	-0.1877	-0.1855	-0.1840	-0.1829
42	-0.2872	-0.2400	-0.2254	-0.2186	-0.2147	-0.2122	-0.2105	-0.2093
41	-0.3222	-0.2700	-0.2537	-0.2461	-0.2418	-0.2391	-0.2372	-0.2358
40	-0.3568	-0.3000	-0.2822	-0.2738	-0.2691	-0.2660	-0.2639	-0.2624
39	-0.3911	-0.3300	-0.3107	-0.3016	-0.2964	-0.2931	-0.2908	-0.2892
38	-0.4251	-0.3600	-0.3392	-0.3295	-0.3239	-0.3203	-0.3179	-0.3161
37	-0.4586	-0.3900	-0.3679	-0.3575	-0.3515	-0.3477	-0.3451	-0.3432
36	-0.4916	-0.4200	-0.3967	-0.3856	-0.3793	-0.3753	-0.3725	-0.3705
35	-0.5242	-0.4500	-0.4255	-0.4139	-0.4073	-0.4030	-0.4001	-0.3980
34	-0.5563	-0.4800	-0.4545	-0.4424	-0.4355	-0.4310	-0.4280	-0.4257
33	-0.5878	-0.5100	-0.4836	-0.4710	-0.4638	-0.4592	-0.4560	-0.4537
32	-0.6187	-0.5400	-0.5129	-0.4999	-0.4924	-0.4877	-0.4844	-0.4820
31	-0.6490	-0.5700	-0.5423	-0.5290	-0.5213	-0.5164	-0.5130	-0.5105
30	-0.6787	-0.6000	-0.5719	-0.5582	-0.5504	-0.5454	-0.5419	-0.5394
29	-0.7077	-0.6300	-0.6016	-0.5878	-0.5798	-0.5747	-0.5712	-0.5686
28	-0.7360	-0.6600	-0.6316	-0.6176	-0.6095	-0.6044	-0.6008	-0.5982
27	-0.7636	-0.6900	-0.6617	-0.6477	-0.6396	-0.6344	-0.6308	-0.6282
26	-0.7904	-0.7200	-0.6921	-0.6781	-0.6701	-0.6649	-0.6613	-0.6587
25	-0.8165	-0.7500	-0.7226	-0.7089	-0.7009	-0.6958	-0.6922	-0.6896
24	-0.8417	-0.7800	-0.7535	-0.7401	-0.7322	-0.7271	-0.7236	-0.7211
23	-0.8662	-0.8100	-0.7846	-0.7716	-0.7640	-0.7590	-0.7556	-0.7531
22	-0.8897	-0.8400	-0.8160	-0.8036	-0.7962	-0.7915	-0.7882	-0.7858
21	-0.9124	-0.8700	-0.8478	-0.8360	-0.8291	-0.8245	-0.8214	-0.8192
20	-0.9342	-0.9000	-0.8799	-0.8690	-0.8625	-0.8583	-0.8554	-0.8533
19	-0.9550	-0.9300	-0.9123	-0.9025	-0.8966	-0.8928	-0.8901	-0.8882
18	-0.9749	-0.9600	-0.9452	-0.9367	-0.9315	-0.9281	-0.9258	-0.9241
17	-0.9939	-0.9900	-0.9785	-0.9715	-0.9671	-0.9643	-0.9624	-0.9610
16	-1.0119	-1.0200	-1.0124	-1.0071	-1.0037	-1.0015	-1.0000	-0.9990
15	-1.0288	-1.0500	-1.0467	-1.0435	-1.0413	-1.0399	-1.0389	-1.0382
14	-1.0448	-1.0800	-1.0817	-1.0808	-1.0800	-1.0794	-1.0791	-1.0789
13	-1.0597	-1.1100	-1.1173	-1.1192	-1.1199	-1.1204	-1.1208	-1.1212
12	-1.0736	-1.1400	-1.1537	-1.1587	-1.1613	-1.1630	-1.1643	-1.1653
11	-1.0864	-1.1700	-1.1909	-1.1995	-1.2043	-1.2075	-1.2098	-1.2115
10	-1.0982	-1.2000	-1.2290	-1.2419	-1.2492	-1.2541	-1.2576	-1.2602
9	-1.1089	-1.2300	-1.2683	-1.2860	-1.2964	-1.3032	-1.3081	-1.3118
8	-1.1184	-1.2600	-1.3088	-1.3323	-1.3461	-1.3554	-1.3620	-1.3670
7	-1.1269	-1.2900	-1.3508	-1.3810	-1.3991	-1.4112	-1.4199	-1.4265
6	-1.1342	-1.3200	-1.3946	-1.4329	-1.4561	-1.4717	-1.4829	-1.4914
5	-1.1405	-1.3500	-1.4407	-1.4887	-1.5181	-1.5381	-1.5525	-1.5635
4	-1.1456	-1.3800	-1.4897	-1.5497	-1.5871	-1.6127	-1.6313	-1.6454
3	-1.1496	-1.4100	-1.5427	-1.6181	-1.6661	-1.6993	-1.7235	-1.7420
2	-1.1524	-1.4400	-1.6016	-1.6982	-1.7612	-1.8053	-1.8379	-1.8630
1	-1.1541	-1.4700	-1.6714	-1.8008	-1.8888	-1.9520	-1.9994	-2.0362

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM E178 Standard Practice for Dealing with Outlying Observations

END OF ITEM C-110

Part 3 – Sitework

Item P-101 Preparation/Removal of Existing Pavements

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

a. Concrete pavement removal. – Not Used

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. If the material is incorporated into embankment, it shall be broken to a maximum size of 3 inch and blended at least 50% with other borrow material.

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. – Not used

101-3.3 Removal of Foreign Substances/contaminates prior to applying pavement markings. Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the RPR in the field during construction.

Chemicals, high-pressure water, or sandblasting may be used. If chemicals are used, they shall comply with the state's environmental protection regulations. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing pavement over 1/8 inch (3 mm) deep. If it is deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the RPR.

Removal of foreign substances shall not proceed until approved by the RPR. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be

deposited on the pavement shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans.

101-3.4 Concrete spall or failed asphaltic concrete pavement repair. Not used

a. Asphalt pavement repair. The Contractor shall repair all failed asphaltic concrete pavement as directed by the RPR. The failed areas shall be removed as specified in paragraph 101-3.1b. All failed material including surface, base course, subbase course, and subgrade shall be removed. Materials and methods of construction shall comply with the applicable sections of these specifications.

101-3.5 Cold milling. Not used

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Not used

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. – Not Used.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Not Used

101-3.10 Removal of Pipe and other Buried Structures. Not used

METHOD OF MEASUREMENT

101-4.1 Pavement removal. The unit of measurement for pavement removal shall be the number of square yards removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal.

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

Item P 101-5.1	Removal of Existing Pavement - per square yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6	Guidelines and Procedures for Maintenance of Airport Pavements.

ASTM International (ASTM)

ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

Item P-152 Excavation, Subgrade, and Embankment

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 Classification. All material excavated shall be classified as defined below:

a. Unclassified excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature

Drainage excavation. Drainage excavation shall consist of all excavation made for the primary purpose of drainage and includes drainage ditches, such as intercepting, inlet or outlet ditches; temporary levee construction; or any other type as shown on the plans.

152-1.3 Unsuitable excavation. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil shall be considered unsuitable for use in embankment construction.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches (100 mm), to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting. Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of

the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes **as** shown on the plans. All unsuitable material shall be disposed of as shown on the plans.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. Not Used

b. Undercutting. Not Used

c. Over-break. Not Used

d. Removal of utilities. Not Used

152-2.3 Borrow excavation. There are no borrow sources within the boundaries of the airport property. The Contractor shall locate and obtain borrow sources of acceptable uniform material. Borrow will be free of contamination from chemical or petroleum products and meet the requirements of classifications A-1-a through A-4 per AASHTO M 145. Materials may include recycled Portland Cement Concrete that is less than 3 inches in any direction. Materials may not include asphalt pavement materials.

152-2.4 Drainage excavation. Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. See details in project plans.

152-2.6 Preparation of embankment area. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches (300 mm) and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the

Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 Formation of embankments. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within ±2% of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The Contractor will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with ASTM D698. A new Proctor shall be developed for each soil type based on visual classification.

Density tests will be taken by the Contractor for based on the UDOT's Minimum Sampling and Testing Requirements of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 96% of maximum density for cohesive soils as determined by AASHTO T 180 Method D for A-1 soils and AASHTO T 99 Method D for all other soils to establish maximum laboratory density with no single determination lower than 92 percent.

If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.

152-2.9 Proof rolling. The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. Before start of embankment, and after compaction is completed, the subgrade area shall be proof rolled with a 20 ton Tandem axle Dual Wheel Dump Truck loaded to the legal limit with tires inflated to 150 psi in the presence of the RPR. Apply a minimum of 33% coverage, or as specified by the RPR, under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch (25 mm) or show permanent deformation greater than 1 inch (25 mm) shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 8 inches and to a density of not less than 90 percent of the maximum dry density as determined by AASHTO T 180 Method D for A-1 soils and AASHTO T 99 Method D for all other soils to establish maximum laboratory density

The material to be compacted shall be within ±2% of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low

areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. The finished surface shall not vary more than 2.5 inches from the design line and grade.

152-2.14 Topsoil. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-3.1 Measurement for payment for excavation specified by the cubic yard shall be computed by the design quantities.

152-3.2 Measurement for payment specified by the foot shall be measured by the linear feet of excavation performed for drainage purposes as determined by the Engineer.

152-3.1 Measurement for payment for borrow specified by the cubic yard shall be computed by the design quantities.

BASIS OF PAYMENT

152-4.1 Excavation payment shall be made at the contract unit price per cubic yard based on plan quantity. This price shall be full compensation for furnishing and placing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 Drainage Excavation payment shall be made at the contract unit price per linear foot of excavation done for drainage purposes. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.3 Borrow payment shall be made at the contract unit price per cubic yard based on plan quantity. This price shall be full compensation for furnishing and placing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-152-4.1	Drainage Excavation - per foot
Item P-152-4.2	Excavation (Plan Quantity) - per cubic yard
Item P-152-4.3	Borrow (Plan Quantity) – per cubic yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2700 kN-m/m^3))
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2	Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66	Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

Item P-154 Subbase Course

DESCRIPTION

154-1.1 This item shall consist of a subbase course composed of granular materials constructed on a prepared subgrade or underlying course in accordance with these specifications, and in conformity with the dimensions and typical cross-section shown on the plans.

MATERIALS

154-2.1 Materials. Material composition and construction methods shall conform to the Utah Department of Transportation 2022 Standard Specifications for Road and Bridge Construction Specification 02056 Embankment, Borrow, and Backfill, Granular Borrow.

METHOD OF MEASUREMENT

154-4.1 Subbase course shall be measured by the number of cubic yards of subbase course material placed and compacted to specified density and plan thickness requirements in the completed course based on calculated plan quantities.

BASIS OF PAYMENT

154-5.1 Payment shall be made at the contract unit price per Cubic Yard (Plan Quantity) for subbase course. This price shall be full compensation for furnishing all materials; for all preparation, hauling, and placing of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-154-5.1	Subbase Course – (Plan Quantity) per cubic yard

REFERENCES

See UDOT 2022 Standard Specifications for Road and Bridge Construction

END OF ITEM P-154

Item P-160 Tie Downs

DESCRIPTION

160-1.1 This item shall consist of constructing Tie Downs in accordance with this specification and as shown on the plans. Each tie down shall consist of 3 separate anchors.

MATERIALS

160-2.1 Concrete. Concrete shall meet the requirements of Item P-610, Concrete for Miscellaneous Structures with a 28 day compressive strength of 4,000 Psi.

160-2.2 Anchor. Tie down rod shall be 304 stainless steel and recessed in concrete. Anchor shall have a working strength of 4000 pounds of vertical strength and shall have a 2.5 inch inside diameter eyelet on the top.

CONSTRUCTION MEHTODS

160-3.1 General. This specification is to construct a complete tiedown anchor system consisting of three anchors flush with the pavement surface in the locations shown on the plans. The Contractor shall be responsible to meet these requirements.

160 - 3.2 Location Tolerances. The tiedown anchors shall be located within +/- 2 inches of the location shown on the plans.

160 - 3.3 Weather limitation. Do not construct tiedowns when weather conditions detrimentally affect the quality of the materials. Do not construct unless the air temperature is at least 40°F and rising and below 90°F. Protect tiedowns from rain.

160 - 3.4 Construction. Once Asphalt has been laid and compacted, core a hole as shown in the details or larger as per manufacturer recommendations. Fill with concrete and embed anchor and finish to grade. Install per manufacturer recommendations.

METHOD OF MEASUREMENT

160-4.1 Tie downs shall be measured for each set of three anchors completed and accepted.

BASIS OF PAYMENT

160-5.1 Payment shall be made at the contract unit price per each tie down completed. Each unit will consist of three (3) separate anchor points. This price shall be full compensation for furnishing all materials including anchor bolts, concrete, and embedded items and for all preparation, delivery, installation, and curing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-160-5.1	Tie Down per each

END OF ITEM P-160

Part 4 –Base Courses

Item P-209 Crushed Aggregate Base Course

DESCRIPTION

209-1.1 This item consists of a base course composed of crushed aggregate base constructed on a prepared course in accordance with these specifications and in conformity to the dimensions and typical cross-sections shown on the plans.

MATERIALS

209-2.1 Crushed aggregate base. Crushed aggregate materials composition and construction methods shall conform to the Utah Department of Transportation 2022 Standard Specifications for Road and Bridge Construction Specification 02721 Untreated Base Course Type 1 Placement and the requirements of this section.

209-3.1 Control strip. NA

209-3.2 Preparing underlying subgrade and/or subbase. The underlying subgrade and/or subbase shall be checked and accepted by the RPR before base course placing and spreading operations begin. Re-proof rolling of the subgrade or proof rolling of the subbase in accordance with Item P-152, at the Contractor's expense, may be required by the RPR if the Contractor fails to ensure proper drainage or protect the subgrade and/or subbase. Any ruts or soft, yielding areas due to improper drainage conditions, hauling, or any other cause, shall be corrected before the base course is placed. To ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope.

209-3.3 Production. The aggregate shall be uniformly blended and, when at a satisfactory moisture content per paragraph 209-3.5.

209-3.4 Placement. The aggregate shall be placed and spread to a uniform thickness and width.

209-3.5 Compaction. Immediately after completion of the spreading operations, compact each layer of the base course, as specified, with approved compaction equipment. The number, type, and weight of rollers shall be sufficient to compact the material to the required density within the same day that the aggregate is placed on the subgrade.

The field density of each compacted lift of material shall be at least an average of 97 percent of maximum laboratory density with no test less than 94 percent of the maximum density of laboratory specimens prepared from samples of the base material delivered to the jobsite. The laboratory specimens shall be compacted and tested in accordance with AASHTO T 180, Method D. The moisture content of the material during placing operations shall be within ±2 percentage points of the optimum moisture content as determined by AASHTO T 180, Method D and AASHTO T 255. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

209-3.6 Weather limitations. Material shall not be placed unless the ambient air temperature is at least 40°F (4°C) and rising. Work on base course shall not be conducted when the subgrade or subbase is wet or frozen or the base material contains frozen material.

209-3.7 Maintenance. The base course shall be maintained in a condition that will meet all specification requirements. When material has been exposed to excessive rain, snow, or freeze-thaw conditions, prior to placement of additional material, the Contractor shall verify that materials still meet all specification requirements. Equipment may be routed over completed sections of base course, provided that no damage results and the equipment is routed over the full width of the completed base course. Any damage resulting to the base course from routing equipment over the base course shall be repaired by the Contractor at the Contractor's expense.

209-3.8 Surface tolerances. After the course has been compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and recompacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense. The smoothness and accuracy requirements specified here apply only to the top layer when base course is constructed in more than one layer.

a. Smoothness. The finished surface shall not vary more than 3/8-inch (9 mm) when tested by red heading on a 25' X 25' grid.

b. Grade. The grade and crown shall be measured on a 25-foot (15-m) grid and shall be within +3/8 inch and -3/8 inch (9 mm) of the specified grade. Where the grade is deficient by more than 3/8-inch (9 mm), the Contractor shall correct such areas at no additional cost by scarifying to a depth of at least 3 inches (75 mm), adding new material of proper gradation, and the material shall be blended and recompacted to grade.

209-3.9 Acceptance sampling and testing. Crushed aggregate base course shall be accepted for density and thickness on an area basis based on UDOT minimum sampling and testing requirements.

a. Density. The RPR shall perform all acceptance density tests**.**

If the specified density is not attained, the area represented by the failed test must be reworked and/or recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

METHOD OF MEASUREMENT

209-4.1 The quantity of crushed aggregate base course shall be the number of cubic yards of crushed aggregate base course material placed and compacted to specified density and plan thickness requirements in the completed course based on calculated plan quantities.

BASIS OF PAYMENT

209-5.1 Payment shall be made at the contract unit price cubic yard for crushed aggregate base course. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-209-5.1	Crushed Aggregate Base Course (Plan Quantity) - per cubic yard

REFERENCES

See UDOT 2022 Standard Specifications for Road and Bridge Construction

END OF ITEM P-209

Part 5 – Stabilized Base Courses – Not Used

Part 6 – Flexible Pavements

Item P-401 Asphalt Mix Pavement

DESCRIPTION

401-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared base or stabilized course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS, COMPOSITION AND CONSTRUCTION METHODS

401-2.1 Materials: Asphalt materials composition and construction methods shall conform to the Utah Department of Transportation 2022 Standard Specifications for Road and Bridge Construction and Special Provisions stated below for a ½ inch PG 64-34: N initial 7, N design 75, and N final 115 pavement mix and the requirements of this section.

1. Section 02741S - Hot Mix Asphalt HMA dated August 28, 2019
2. Section 02745 – Asphalt Material dated January 1, 2017
3. Section 02745M – Asphalt Material dated November 20, 2019
4. Section 02701 - Pavement Smoothness dated June 27, 2019

CONTRACTOR QUALITY CONTROL (CQC)

401-5.1 General. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications

401-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

401-5.3 Contractor QC testing. The Contractor shall perform tests necessary to control the production and construction processes applicable to these specifications per UDOT's Minimum Sampling and Testing Requirements and the following requirements.

a. Smoothness The Contractor shall perform smoothness testing in the transverse direction daily to verify that the construction joint processes are producing pavement with variances less than 3/16 inch in 10 feet and to identify areas that may pond water. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues Transverse measurements shall be taken for each day's production placed. Transverse measurements shall be taken each 25 feet (7.5 m) or more often as determined by the RPR. Contractor

shall flood the pavement with water in the presence of the RPR to verify that ponding of water does not exist. If ponding exists, the RPR will determine what actions need to be taken to eliminate the ponding.

b. Thickness. Thickness shall be evaluated daily to allow adjustments to paving operations when thickness measurements do not meet specifications. Thickness measurements will be taken by comparing the elevations of the top of the Crushed Aggregate Base Course compared to the compacted top elevation of the HMA at appropriate 25 ft grid intervals. The final thickness of the pavement will not vary from the thickness shown on the plans by more than 1/2 inch (12 mm) greater or ¼ inch less vertically.

METHOD OF MEASUREMENT

401-7.1 Measurement. Asphalt shall be measured by the number of tons of asphalt used in the accepted work. Batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

401-8.1 Payment. Payment for a lot of asphalt meeting all acceptance criteria. Payment for acceptable lots shall be adjusted according to UDOT specification 02741S, 1.6, Acceptance subject to the limitation that no incentives are to be paid.

a. The total project payment for plant mix asphalt pavement shall not exceed 3.0 percent of the product of the contract unit price and the total number of tons of asphalt used in the accepted work.

b. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

401-8.1 Payment.

Payment will be made under:

Item P-401-8.1	HMA – ½ Inch - per ton

REFERENCES

See UDOT 2022 Standard Specifications for Road and Bridge Construction

END OF ITEM P-401

Part 7 – Rigid Pavement - Not Used

Part 8– Surface Treatments – Not Used

Part 9– Miscellaneous

Item P-602 Emulsified Asphalt Prime Coat

DESCRIPTION

602-1.1 This item shall consist of an application of emulsified asphalt material on the prepared base course in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

602-2.1 Emulsified Asphalt material. Emulsified asphalt materials composition and construction methods shall conform to the Utah Department of Transportation 2022 Standard Specifications for Road and Bridge Construction and Special Provisions stated below and the requirements of this section. If a conflict exists between these specifications and the UDOT specifications, the UDOT specifications will be enforced.

1. Section 02748 – Untreated Base Course (UTBC) dated November 18, 2021

The emulsified asphalt material shall be as specified in ASTM D3628 for use as a prime coat appropriate to local conditions. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the emulsified asphalt material. The COA shall be provided to and approved by the Resident Project Representative (RPR) before the emulsified asphalt material is applied. The furnishing of the COA for the emulsified asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

CONSTRUCTION METHODS

602-3.1 Weather limitations. The emulsified asphalt prime coat shall be applied only when the existing surface is dry; the atmospheric temperature is 50°F (10°C) or above, and the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

602-3.2 Equipment. The equipment shall include a self-powered pressure asphalt material distributor and equipment for heating asphalt material.

Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 65.0 psi (4.5 kg/sq cm) of tire width to prevent rutting, shoving or otherwise damaging the base, surface or other layers in the pavement structure. Design and equip the distributor to spray the asphalt material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.05 to 1.0 gallons per square yard (0.23 to 4.5 L/square meter), with a pressure range of 25 to 75 psi (172.4 to 517.1 kPa) and with an allowable variation from the specified rate of not more than ±5%, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying asphalt material manually to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the asphalt

material during the heating process. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

A power broom and power blower suitable for cleaning the surfaces to which the asphalt coat is to be applied shall be provided.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

602-3.3 Application of emulsified asphalt material. Immediately before applying the prime coat, the full width of the surface to be primed shall be swept with a power broom to remove all loose dirt and other objectionable material.

The asphalt emulsion material shall be uniformly applied with an asphalt distributor at the rate of 0.15 to 0.30 gallons per square yard (0.68 to 1.36 liters per square meter) depending on the base course surface texture. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Following application of the emulsified asphalt material and prior to application of the succeeding layer of pavement, allow the asphalt coat to cure and to obtain evaporation of any volatiles or moisture. Maintain the coated surface until the succeeding layer of pavement is placed, by protecting the surface against damage and by repairing and recoating deficient areas. Allow the prime coat to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course. Furnish and spread sand to effectively blot up and cure excess asphalt material. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the Owner. Keep traffic off surfaces freshly treated with asphalt material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces.

602-3.4 Trial application rates. The Contractor shall apply a minimum of three lengths of at least 100 feet (30 m) for the full width of the distributor bar to evaluate the amount of emulsified asphalt material that can be satisfactorily applied with the equipment. Apply three different application rates of emulsified asphalt materials within the application range specified in paragraph 602-3.3. Other trial applications can be made using various amounts of material as directed by the RPR. The trial application is to demonstrate the equipment can uniformly apply the emulsified asphalt material within the rates specified and determine the application rate for the project.

602-3.5 Freight and waybills. The Contractor shall submit waybills and delivery tickets during the progress of the work. Before the final estimate is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

602-4.1 The emulsified asphalt material for prime coat shall be measured by the ton. Volume shall be corrected to the volume at 60°F (16°C) in accordance with ASTM D4311. The emulsified asphalt material paid for will be the measured quantities used in the accepted work, provided that the measured quantities are not 10% over the specified application rate. Any amount of emulsified asphalt material more than 10% over the specified application rate for each application will be deducted from the measured quantities, except for irregular areas where hand spraying of the emulsified asphalt material is necessary. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

602-5.1 Payment shall be made at the contract unit price per ton for emulsified asphalt prime coat. This price shall be full compensation for furnishing all materials and for all preparation, delivering, and applying the materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item P-602-5.1	Emulsified Asphalt Prime Coat – per ton

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D2995	Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts

END OF ITEM P-602

Item P-610 Concrete for Miscellaneous Structures

DESCRIPTION

610-1.1 This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

MATERIALS

610-2.1 General. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Resident Project Representative (RPR) before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. Fine aggregate and coarse aggregates to be used in all concrete shall have been tested separately within six months of the project in accordance with ASTM C1260. Test results shall be submitted to the RPR. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting). If the expansion either or both test specimen is greater than 0.08% at 14 days, but less than 0.20%, a minimum of 25% of Type F fly ash, or between 40% and 55% of slag cement shall be used in the concrete mix.

If the expansion is greater than 0.20%, the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; or aggregates that meet P-501 reactivity test requirements may be utilized.

610-2.2 Coarse aggregate. The coarse aggregate for concrete shall meet the requirements of ASTM C33 and the requirements of Table 4, Class Designation 5S; and the grading requirements shown below, as required for the project.

Coarse Aggregate Grading Requirements

Maximum Aggregate Size	ASTM C33, Table 3 Grading Requirements (Size No.)
1 1/2 inch (37.5 mm)	467 or 4 and 67
1 inch (25 mm)	57
¾ inch (19 mm)	67
½ inch (12.5 mm)	7

610-2.3 Fine aggregate. The fine aggregate for concrete shall meet all fine aggregate requirements of ASTM C33.

610-2.4 Cement. Cement shall conform to the requirements of ASTM C-150 Type IIA.

610-2.5 Cementitious materials.

a. Fly ash. Fly ash shall meet the requirements of ASTM C618, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than 15% and a total available alkali content less than 3% per ASTM C311. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C618 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the RPR.

610-2.6 Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

610-2.7 Admixtures. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the RPR may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the RPR from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. Air-entraining admixtures. Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. Water-reducing admixtures. Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used.

c. Other chemical admixtures. The use of set retarding, and set-accelerating admixtures shall be approved by the RPR. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.8 Premolded joint material. Not used

610-2.9 Joint filler. Not used

610-2.10 Steel reinforcement. Not used**.**

610-2.11 Materials for curing concrete. Curing materials shall **White-pigmented Liquid Membrane-Forming Compound, Type 2, Class B** in accordance with ASTM – 309.

CONSTRUCTION METHODS

610-3.1 General. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the RPR.

610-3.2 Concrete Mixture. The concrete shall develop a compressive strength of 4000 psi in 28 days as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with ASTM C39. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard (280 kg per cubic meter). The water cementitious ratio shall not exceed 0.45 by weight. The air content of the concrete shall be 5% +/- 1.2% as determined by ASTM C231 and shall have a slump of not more than 4 inches (100 mm) as determined by ASTM C143.

610-3.3 Mixing. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without the RPRs approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.4 Forms. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the RPR. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

610-3.5 Placing reinforcement. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.6 Embedded items. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or

any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.7 Concrete Consistency. The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ASTM C143.

610-3.8 Placing concrete. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the RPR. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet (1.5 m). Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.9 Vibration. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

610-3.10 Joints. Joints shall be constructed as indicated on the plans.

610-3.11 Finishing. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

610-3.12 Curing and protection. All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

610-3.13 Cold weather placing. When concrete is placed at temperatures below 40°F (4°C), follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

610-3.14 Hot weather placing. When concrete is placed in hot weather greater than 85ºF (30 ºC), follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

QUALITY ASSURANCE (QA)

610-4.1 Quality Assurance sampling and testing. Concrete for each day's placement will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The RPR will sample the concrete in accordance with ASTM C172; test the slump in accordance with ASTM C143; test air content in accordance with ASTM C231; make and cure compressive strength specimens in accordance with ASTM C31; and test in accordance with ASTM C39. The QA testing agency will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

610-4.2 Defective work. Any defective work that cannot be satisfactorily repaired as determined by the RPR, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

METHOD OF MEASUREMENT

610-5.1 Concrete shall be considered incidental and no separate measurement shall be made.

BASIS OF PAYMENT

610-6.1 Concrete shall be considered incidental and no separate payment shall be made.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A934	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
ASTM C685	Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C989	Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157	Standard Performance Specification for Hydraulic Cement
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1365	Standard Test Method for Determination of the Proportion of Phases in Portland Cement and Portland-Cement Clinker Using X-Ray Powder Diffraction Analysis
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

American Concrete Institute (ACI)

ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

END OF ITEM P-610

Item P-620 Runway and Taxiway Marking

DESCRIPTION

620-1.1 This item shall consist of the preparation and painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Resident Project Representative (RPR). The terms "paint" and "marking material" as well as "painting" and "application of markings" are interchangeable throughout this specification.

MATERIALS

620-2.1 Materials acceptance. The Contractor shall furnish manufacturer's certified test reports, for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. This certification along with a copy of the paint manufacturer's surface preparation; marking materials, including adhesion, flow promoting and/or floatation additive; and application requirements must be submitted and approved by the Resident Project Representative (RPR) prior to the initial application of markings. The reports can be used for material acceptance or the RPR may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the RPR upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers that are easily quantifiable for inspection by the RPR.

620-2.2 Marking materials.

Table 1. Marking Materials

Paint				Glass Beads	
Type	**Color**	**Fed Std. 595 Number**	**Application Rate Maximum**	**Type**	**Application Rate Minimum**
Waterborne Type I	Yellow	33538 or 33655	115 ft^2/gal	I	7 lb/gal
Temporary Marking Waterborne Type I	Yellow	33538 or 33655	230 ft^2/gal	NA	No beads

a. Waterborne Paint. Paint shall meet the requirements of Federal Specification TT-P-1952F or shall conform to the Utah Department of Transportation 2022 Standard Specifications for Road and Bridge Construction and Special Provisions stated below and the requirements of this section. If a conflict exists between these specifications and the UDOT specifications, the UDOT specifications will be enforced.

1. Section 02765M – Pavement Marking Paint dated January 1, 2017

The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.

b. Reflective media. Glass beads for white and yellow paint shall meet the requirements for Federal Specification TT-B-1325D Type I, Gradation A.

Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

CONSTRUCTION METHODS

620-3.1 Weather limitations. Painting shall only be performed when the surface is dry, and the ambient temperature and the pavement surface temperature meet the manufacturer's recommendations in accordance with paragraph 620-2.1. Painting operations shall be discontinued when the ambient or surface temperatures does not meet the manufacturer's recommendations. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns. Markings shall not be applied when weather conditions are forecasts to not be within the manufacturers' recommendations for application and dry time.

620-3.2 Equipment. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray. The marking equipment for both paint and beads shall be calibrated daily.

620-3.3 Preparation of surfaces. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminates that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the RPR. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

a. Preparation of new pavement surfaces. The area to be painted shall be cleaned by broom, blower, water blasting, or by other methods approved by the RPR to remove all contaminants, including PCC curing compounds, minimizing damage to the pavement surface.

b. Preparation of pavement to remove existing markings. Existing pavement markings shall be removed by rotary grinding, water blasting, or by other methods approved by the RPR minimizing damage to the pavement surface. The removal area may need to be larger than the area of the markings to eliminate ghost markings. After removal of markings on asphalt pavements, apply a fog seal or seal coat to 'block out' the removal area to eliminate 'ghost' markings.

c. Preparation of pavement markings prior to remarking. Prior to remarking existing markings, loose existing markings must be removed minimizing damage to the pavement surface, with a method approved by the RPR. After removal, the surface shall be cleaned of all residue or debris.

Prior to the application of markings, the Contractor shall certify in writing that the surface is dry and free from dirt, grease, oil, laitance, or other foreign material that would prevent the bond of the paint to the pavement or existing markings. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the RPR prior to the initial application of markings.

620-3.4 Layout of markings. The proposed markings shall be laid out in advance of the paint application.

620-3.5 Application. A period of 30 days shall elapse between placement of HMA and application of the permanent paint markings. Paint shall be applied at the locations and to the dimensions and spacing

shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the RPR.

The edges of the markings shall not vary from a straight line more than 1/2 inch (12 mm) in 50 feet (15 m), and marking dimensions and spacing shall be within the following tolerances:

Marking Dimensions and Spacing Tolerance

Dimension and Spacing	Tolerance
36 inch (910 mm) or less	±1/2 inch (12 mm)
greater than 36 inch to 6 feet (910 mm to 1.85 m)	±1 inch (25 mm)
greater than 6 feet to 60 feet (1.85 m to 18.3 m)	±2 inch (50 mm)
greater than 60 feet (18.3 m)	±3 inch (76 mm)

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted.

Glass beads shall be distributed immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 1. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made. Regular monitoring of glass bead embedment and distribution should be performed.

620-3.6 Application--preformed thermoplastic airport pavement markings. – Not used

620-3.7 Control strip. Prior to the full application of airfield markings, the Contractor shall prepare a control strip in the presence of the RPR. The Contractor shall demonstrate the surface preparation method and all striping equipment to be used on the project. The marking equipment must achieve the prescribed application rate of paint and population of glass beads (per Table 1) that are properly embedded and evenly distributed across the full width of the marking. Prior to acceptance of the control strip, markings must be evaluated during darkness to ensure a uniform appearance.

620-3.8 Retro-reflectance. Not Used

620-3.9 Protection and cleanup. After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the RPR. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1a The quantity of markings to be paid for shall be measured by the number of gallons of paint used performed in accordance with the specifications and accepted by the RPR**.**

620-4.1b The quantity of temporary markings to be paid for shall be measured by the number of gallons of paint used performed in accordance with the specifications and accepted by the RPR.

620-4.1c The quantity of the removal of existing pavement markings to be paid for shall be measured by the linear feet of markings removed.

BASIS OF PAYMENT

620-5.1 This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item complete in place and accepted by the RPR in accordance with these specifications.

620-5.1a Payment for markings shall be made at the contract price for the number of gallons of paint. This price shall be full compensation for furnishing all materials included glass beads and for all labor, equipment, tools, and incidentals necessary to complete the item.

620-5.2b Payment for temporary markings shall be made at the contract price for the number of gallons of paint. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

620-5.3c Payment for removal of existing pavement markings shall be made at the contract price for the linear feet of existing paint markings removed. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-620-5.1	Runway and Taxiway Marking Paint per gallon
Item P-620-5.2	Temporary Runway and Taxiway Marking Paint per gallon
Item P-620-5.3	Removal of Existing Runway and Taxiway Marking per foot.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D476	Standard Classification for Dry Pigmentary Titanium Dioxide Products
ASTM D968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D2074	Standard Test Method for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2240	Standard Test Method for Rubber Property - Durometer Hardness
ASTM D7585	Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments
ASTM E303	Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
ASTM E1710	Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer
ASTM E2302	Standard Test Method for Measurement of the Luminance Coefficient Under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer

ASTM G154 Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

Code of Federal Regulations (CFR)

40 CFR Part 60, Appendix A-7, Method 24
Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings

29 CFR Part 1910.1200 Hazard Communication

Federal Specifications (FED SPEC)

FED SPEC TT-B-1325D Beads (Glass Spheres) Retro-Reflective

FED SPEC TT-P-1952F Paint, Traffic and Airfield Marking, Waterborne

FED STD 595 Colors used in Government Procurement

Commercial Item Description

A-A-2886B Paint, Traffic, Solvent Based

Advisory Circulars (AC)

AC 150/5340-1 Standards for Airport Markings

AC 150/5320-12 Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces

END OF ITEM P-620

Part 10 – Fencing - Not Used

Part 11 – Drainage

Item D-701 Pipe for Storm Drains and Culverts

DESCRIPTION

701-1.1 This item shall consist of the construction of pipe culverts and storm drains in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

MATERIALS

701-2.1 Materials shall meet the requirements shown on the plans and specified below. Underground piping and components used in drainage systems for terminal and aircraft fueling ramp drainage shall be noncombustible and inert to fuel in accordance with National Fire Protection Association (NFPA) 415.

701-2.2 Pipe. The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements:

American Association of State Highway and Transportation Officials (AASHTO) M167	Standard Specification for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
AASHTO M190	Standard Specification for Bituminous-Coated Corrugated Metal Culvert Pipe and Pipe Arches

701-2.3 Concrete. -Not Used

701-2.4 Rubber gaskets. Rubber gaskets for rigid pipe shall conform to the requirements of ASTM C443. Rubber gaskets for zinc-coated steel pipe and precoated galvanized pipe shall conform to the requirements of ASTM D1056, for the "RE" closed cell grades.

701-2.5 Joint mortar. Not Used

701-2.6 Joint fillers. Not Used

701-2.7 Plastic gaskets. Not Used

701-2.8. Controlled low-strength material (CLSM). Not used.

701-2.9 Precast box culverts. Not Used

701-2.10 Precast concrete pipe. Not Used.

CONSTRUCTION METHODS

701-3.1 Excavation. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but it shall not be less than the external diameter of the pipe plus 12 inches (300 mm) on each side. The trench walls shall be approximately vertical.

The Contractor shall comply with all current federal, state and local rules and regulations governing the safety of men and materials during the excavation, installation and backfilling operations. Specifically, the Contractor shall observe that all requirements of the Occupational Safety and Health Administration (OSHA) relating to excavations, trenching and shoring are strictly adhered to. The width of the trench

shall be sufficient to permit satisfactorily jointing of the pipe and thorough compaction of the bedding material under the pipe and backfill material around the pipe, but it shall not be greater than the widths shown on the plans trench detail.

Where rock, hardpan, or other unyielding material is encountered, the Contractor shall remove it from below the foundation grade for a depth of at least 8 inch (200 mm) or 1/2 inch (12 mm) for each foot of fill over the top of the pipe (whichever is greater) but for no more than three-quarters of the nominal diameter of the pipe. The excavation below grade should be filled with granular material to form a uniform foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The RPR shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

The excavation for pipes placed in embankment fill shall not be made until the embankment has been completed to a height above the top of the pipe as shown on the plans.

701-3.2 Bedding. The bedding surface for the pipe shall provide a foundation of uniform density to support the pipe throughout its entire length.

a. Rigid pipe. The pipe bedding shall be constructed uniformly for the full length of the pipe barrel, as required on the plans. The maximum aggregate size shall be 1 in when the bedding thickness is less than 6 inches, and 1-1/2 in when the bedding thickness is greater than 6 inches. Bedding shall be loosely placed uncompacted material under the middle third of the pipe prior to placement of the pipe.

b. Flexible pipe. Not Used

c. Other pipe materials. Not Used.

701-3.3 Laying pipe. The pipe laying shall begin at the lowest point of the trench and proceed upgrade. The lower segment of the pipe shall be in contact with the bedding throughout its full length. Bell or groove ends of rigid pipes and outside circumferential laps of flexible pipes shall be placed facing upgrade.

701-3.4 Joining pipe. Joints shall be made with rubber gaskets. Band with projections (dimple bands) can be used in extension of existing pipes.

a. Concrete pipe. Not Used

b. Metal pipe. Metal pipe shall be firmly joined by form-fitting bands conforming to the requirements of ASTM A760 for steel pipe.

c. PVC, Polyethylene, or Polypropylene pipe. Not Used

d. Fiberglass pipe. Not Used

701-3.5 Embedment and Overfill. Pipes shall be inspected before any fill material is placed; any pipes found to be out of alignment, unduly settled, or damaged shall be removed and re-laid or replaced at the Contractor's expense.

701-3.5-1 Embedment Material Requirements

a. Concrete Pipe. Not Used

b. Plastic and fiberglass Pipe. Not Used

c. Metal Pipe. Embedment material shall be granular as specified in the contract document and specifications, and shall be free of organic material, rock fragments larger than 1.5 inches in the greatest

dimension and frozen lumps. As a minimum, backfill materials shall meet the requirements of ASTM D3282, A-1, A-2, or A-3. Embedment material shall extend to 12 inches above the top of the pipe.

701-3.5-2 Placement of Embedment Material

The embedment material shall be compacted in layers not exceeding 6 inches (150 mm) on each side of the pipe and shall be brought up one foot (30 cm) above the top of the pipe or to natural ground level, whichever is greater. Thoroughly compact the embedment material under the haunches of the pipe without displacing the pipe. Material shall be brought up evenly on each side of the pipe for the full length of the pipe.

When the top of the pipe is above the top of the trench, the embedment material shall be compacted in layers not exceeding 6 inches (150 mm) and shall be brought up evenly on each side of the pipe to one foot (30 cm) above the top of the pipe. All embedment material shall be compacted to a density required under Item P-152.

Concrete cradles and flowable fills, such as controlled low strength material (CLSM) or controlled density fill (CDF), may be used for embedment provided adequate flotation resistance can be achieved by restraints, weighing, or placement technique.

It shall be the Contractor's responsibility to protect installed pipes and culverts from damage due to construction equipment operations. The Contractor shall be responsible for installation of any extra strutting or backfill required to protect pipes from the construction equipment.

701-3.6 Overfill

Pipes shall be inspected before any overfill is in place. Any pipes found to be out of alignment, unduly settled, or damaged shall be removed and relaid or replaced at the Contractor's expense. Evaluation of any damage to RCP shall be evaluated based on AASHTO R73.

Overfill material shall be place and compacted in layers as required to achieve compaction to at least 95 percent standard proctor per ASTM D698. The soil shall contain no debris, organic matter, frozen material, or stones with a diameter greater than one half the thickness of the compacted layers being placed.

701-3.7 Inspection Requirements

An initial post installation inspection shall be performed by the RPR no sooner than 30 days after completion of installation and final backfill. Clean or flush all lines prior to inspection.

Use a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe interior. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a 90 degree angle with the axis of the pipe rotating 360 degrees. Use equipment to move the camera through the pipe that will not obstruct the camera's view or interfere with proper documentation of the pipe's condition. The video image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe.

Vertical grade and horizontal alignment tolerances shall be within 1/2 inch of design grade and alignment and should provide for positive drainage through pipe. Deflection of installed pipe shall not exceed 5% as a percentage of the average inside diameter of the pipe.

If deflection or grade readings in excess of the allowable deflection are obtained, remove the pipe with excessive deflection and replace with new pipe. Isolated areas may exceed allowable by 2.5% with concurrence of RPR. Repair or replace any pipe with cracks exhibiting displacement across the crack, bulges, creases, tears, spalls, or delaminations. The report for pipe shall include as a minimum, the deflection results and final post installation inspection report. The inspection report shall include: a copy

of all video taken, pipe location identification, equipment used for inspection, inspector name, deviation from design line and grade, and inspector's notes.

METHOD OF MEASUREMENT

701-4.1 The length of pipe shall be measured in linear feet (m) of pipe in place, completed, and accepted. It shall be measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. All fittings shall be included in the footage as typical pipe sections in the pipe being measured.

BASIS OF PAYMENT

701-5.0 These prices shall fully compensate the Contractor for furnishing all materials and for all preparation, excavation, and installation of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item.

701-5.1 Payment will be made at the contract unit price per linear foot (meter) for:

Item 701-5.1	Drainage Pipe –18 inch, Steel, Silt Tight per linear foot
Item 701-5.2	Drainage Pipe – 24 inch Steel, Silt Tight per linear foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M167	Standard Specification for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
AASHTO M190	Standard Specification for Bituminous-Coated Corrugated Metal Culvert Pipe and Pipe Arches
AASHTO M243	Standard Specification for Field Applied Coating of Corrugated Metal Structural Plate for Pipe, Pipe-Arches, and Arches

ASTM International (ASTM)

ASTM D1056	Standard Specification for Flexible Cellular Materials Sponge or Expanded Rubber
ASTM D3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes

END ITEM D-701

Part 12 – Turfing

Item T-901 Seeding

DESCRIPTION

901-1.1 This item shall consist of soil preparation and seeding the areas shown on the plans or as directed by the RPR in accordance with these specifications.

MATERIALS

901-2.1 Seed. The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181, Federal Specification, Seeds, Agricultural.

Seed shall be furnished separately or in mixtures in standard containers labeled in conformance with the Agricultural Marketing Service (AMS) Seed Act and applicable state seed laws with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the RPR duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six (6) months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed. Wet, moldy, or otherwise damaged seed will be rejected.

Seeds shall be applied as follows:

Seed Properties and Rate of Application

Seed: Common Name	Bulk Pounds per acre	PLS Pounds per acre
Indian Ricegrass	3	2.74
Siberian Wheatgrass	2	1.61
Pubescent Wheatgrass	1.5	1.34
Western Wheatgrass	1.5	1.3
Sand Dropseed	0.1	0.08
Muttongrass	0.5	0.45
Blue Flax	1	0.87
Sainfoin	1	0.91
Palmer Penstemon	0.25	0.2
Small Burnet	1	0.91
Fourwing Saltbush	0.5	0.21

Seeding shall be performed during the period between September 15 and October 1 inclusively unless otherwise approved by the RPR.

901-2.2 Lime. Not required.

901-2.3 Fertilizer. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

901-2.4 Soil for repairs. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the RPR before being placed.

CONSTRUCTION METHODS

901-3.1 Advance preparation and cleanup. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches (125 mm) as a result of grading operations and, if immediately prior to seeding, the top 3 inches (75 mm) of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

901-3.2 Dry application method.

a. General. Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing. The fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

b. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot (60 to 97 kg per meter) of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot (223 to 298 kg per meter) of width for sandy or light soils.

901-3.3 Wet application method.

a. General. The Contractor may elect to apply seed and fertilizer by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

b. Spraying equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons (190 liters) over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons (380 liters) per minute at a pressure of 100 lb / sq inches (690 kPa). The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch (16 mm) solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet (6 to 30 m). One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet (15 m) in length shall be provided to which the nozzles may be connected.

c. Mixtures Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds (100 kg) of these combined solids shall be added to and mixed with each 100 gallons (380 liters) of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. The Contractor shall identify to the RPR all sources of water at least two (2) weeks prior to use. The RPR may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the RPR following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within two (2) hours from the time they were mixed or they shall be wasted and disposed of at approved locations.

d. Spraying. Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area.

Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the RPR, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

901-3.4 Maintenance of seeded areas. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the RPR. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the RPR. A grass stand shall be considered adequate when bare spots are one square foot (0.01 sq m) or less, randomly dispersed, and do not exceed 3% of the area seeded.

METHOD OF MEASUREMENT

901-4.1 The quantity of seeding to be paid for shall be the number of units 1,000 square feet measured on the ground surface, completed and accepted.

BASIS OF PAYMENT

901-5.1 Payment shall be made at the contract unit price per 1,000 square feet or fraction thereof, which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Payment will be made under:

Item 901-5.1	Seeding - per 1,000 square feet

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C602	Standard Specification for Agricultural Liming Materials

Federal Specifications (FED SPEC)

FED SPEC	JJJ-S-181, Federal Specification, Seeds, Agricultural

Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-901

Item T-905 Topsoil

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated areas to be stripped on the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the RPR.

MATERIALS

905-2.1 Topsoil. Topsoil shall be the surface layer of soil with no admixture of refuse or any material toxic to plant growth, and it shall be reasonably free from subsoil and stumps, roots, brush, stones (2 inches (50 mm) or more in diameter), and clay lumps or similar objects. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sod and herbaceous growth such as grass and weeds are not to be removed, but shall be thoroughly broken up and intermixed with the soil during handling operations. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means, shall be removed.

CONSTRUCTION METHODS

905-3.1 General. Areas to be topsoiled shall be shown on the plans. Areas to be stripped of topsoil and the stripping depths shall be shown on the plans.

Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and for the handling and placing of all required materials shall be on hand, in good condition, and approved by the RPR before the various operations are started.

905-3.2 Preparing the ground surface. Immediately prior to dumping and spreading the topsoil on any area, the surface shall be loosened by discs or spike-tooth harrows, or by other means approved by the RPR, to a minimum depth of 2 inches (50 mm) to facilitate bonding of the topsoil to the covered subgrade soil. The surface of the area to be topsoiled shall be cleared of all stones larger than 2 inches (50 mm) in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting. Limited areas, as shown on the plans, which are too compact to respond to these operations shall receive special scarification.

Grades on the area to be topsoiled, which have been established by others as shown on the plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at the prescribed grades in an even and compacted condition to prevent the formation of low places or pockets where water will stand.

905-3.3 Obtaining topsoil. Prior to the stripping of topsoil from designated areas, any vegetation, briars, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, shall be removed using methods approved by the RPR. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means shall be removed.

Topsoil stockpiled by the Contractor shall be rehandled and placed without additional compensation. Any remaining topsoil stockpiles and areas adjacent thereto shall be graded and put into a condition acceptable for seeding.

905-3.4 Placing topsoil. The topsoil shall be evenly spread on the prepared areas to a uniform depth. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a

condition detrimental to the work. Spreading shall be carried on so that turfing operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones or rocks (2 inches (50 mm) or more in diameter), roots, litter, or any foreign matter shall be raked up and disposed of by the Contractor. after spreading is completed, the topsoil shall be satisfactorily compacted by rolling with a cultipacker or by other means approved by the RPR. The compacted topsoil surface shall conform to the required lines, grades, and cross-sections. Any topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed.

METHOD OF MEASUREMENT

905-4.1 Strip, Stockpile and Spread Topsoil on the site shall be measured by the design calculated number of cubic yards of topsoil.

BASIS OF PAYMENT

905-5.1 Payment will be made at the contract unit price per square yard for topsoil. This price shall be full compensation for furnishing all materials and for all striping, excavation, stockpiling, preparation, placing, and spreading of the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item T-905-5.1	Strip, Stockpile and Spread Topsoil (Plan Quantity) per cubic yard.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C117	Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing

Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-905

Item T-908 Hydraulic Erosion Control Products

DESCRIPTION

908-1.1 This item shall consist of furnishing, hauling, placing, and securing Hydraulic Erosion Control Products on surfaces indicated on the plans or designated by the RPR.

A. Hydraulic Erosion Control Products (HECP) – Biodegradable manufactured thermally processed natural or reinforced interlocking fibers and pre-mixed with a tackifier.

1. Mixed with water and hydraulically applied as a slurry on recently constructed areas.

908-1.1 Submittals

A. Manufacturer's product data sheets and installation instructions.

MATERIALS

908-3.1 Hydraulic Erosion Control Products

A. Furnish HECP according to Table 1 and the following:

1. HECP Type 1

a. Add a tackifier when not pre-mixed into manufacturer package, see this Section, 908-3.3.

Table 1

Requirements for Hydraulic Erosion Control Products		
Product Composition	**Test Method (ASTM)**	**Type 1**
Thermally Processed Fiber		85% ±10%
Tackifier		5% ±2%
Crosslinked Hydro-Colloidal Tackifier		N/A
Crimped Interlocking Fibers		N/A
Moisture Content		12% ±3%
Organic Matter (minimum)		90%
Colored To Contrast Application Area		Yes
Physical Properties		
Mass per Unit Area (minimum)	D 6566	8 oz/yd^2
Ground Cover (minimum)	D 6567	90%

Water Holding Capacity (minimum)	D 7367	600%
Performance Properties		
Functional Longevity		3-6 months
Cover Factor (maximum)	D 6459	0.10
Vegetation Establishment (minimum)	D 7322	300%

908-3.2 Water

A. Free of dirt, silt and other detrimental matter.

908-3.3 Tackifier

A. General
   1. Free from growth or germination inhibiting factors.
   2. Nonflammable
   3. Nontoxic to aquatic organisms.
   4. Functional for a minimum of 180 days.

B. Guar-based tackifier
   1. Derived from ground endosperm of guar seeds (Cyamopsis tetragonolobus) and treated with dispersant agents.
   2. Apply at a rate of 50 lbs per acre.

C. Psyllium-based tackifier
   1. Manufactured from the finely ground muciloid coating of Plantago ovata or Plantago ispaghula seeds.
   2. Will hydrate when mixed with water to form a slurry and produces a firm, resilient and rewettable membrane on the soil surface after application.
   3. Apply at a rate of 100 lb per acre.

D. Starch-based tackifier
   1. Typically derived from corn or potatoes in a non-ionic, cold-water soluble (pre-gelatinized) granular form.
   2. Apply at a rate of 150 lb/acre.

CONSTRUCTION METHODS

908-4.1 Preparation

A. Complete required grading, topsoil placement, and seeding in designated areas before applying HECP.

B. Remove all large clods, stumps, stones, brush, roots, and other foreign material from the area.

C. Apply HECP within 24 hours after seeding.

D. Provide sufficient time for HECP to cure according to manufacturer's recommendation before precipitations falls.

908-4.2 HECP Application

A. Use HECP components pre-packed by the manufacturer.
   1. Do not field mix materials unless using a HECP Type 1 product that does not include a pre-mixed tackifier into manufacturer package.

B. Deliver material and products in original ultra violet (UV) and weather- resistant factory labeled packages showing the name of the manufacturer and product description.

C. Mix water and HECP according to the manufacturer's recommendation.

D. Apply HECP at the rates in Table 2, unless otherwise specified.

Table 2

HECP Application Rates	
HECP Type	**Minimum Rates (lbs per acre)**
Type 1	2,000

E. Apply a uniform layer of HECP slurry to targeted areas from both the top and bottom of the slope to meet manufacturer's recommendation for installed thickness and ground coverage.

1. Remove overspray before the HECP slurry dries.

908-4.3 Care and repair.

a. The Contractor shall care for the areas until final acceptance of the project. Care shall consist of providing protection against traffic or other use by placing warning signs, as approved by the RPR, and erecting any barricades that may be shown on the plans before or immediately after mulching has been completed on the designated areas.

b. The Contractor shall be required to repair or replace any area that is defective or becomes damaged until the project is finally accepted. When, in the judgment of the RPR, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement shall be borne by the Contractor.

METHOD OF MEASUREMENT

908-5.1 HECP Type I shall be measured in square yards on the basis of the actual surface area acceptably covered.

BASIS OF PAYMENT

908-6.1 Payment will be made at the contract unit price per square yard for HECP Type I. The price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item T-908-6.1 HECP Type I - per 1000 square feet

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

A. ASTM D 6459: Determination of Rolled Erosion Control Product (RECP) Performance in Protecting Hillslopes from Rainfall-Induced Erosion

B. ASTM D 6566: Measuring Mass per Unit Area of Turf Reinforcement Mats

C. ASTM D 6567: Measuring the Light Penetration of a Turf Reinforcement Mat (TRM)

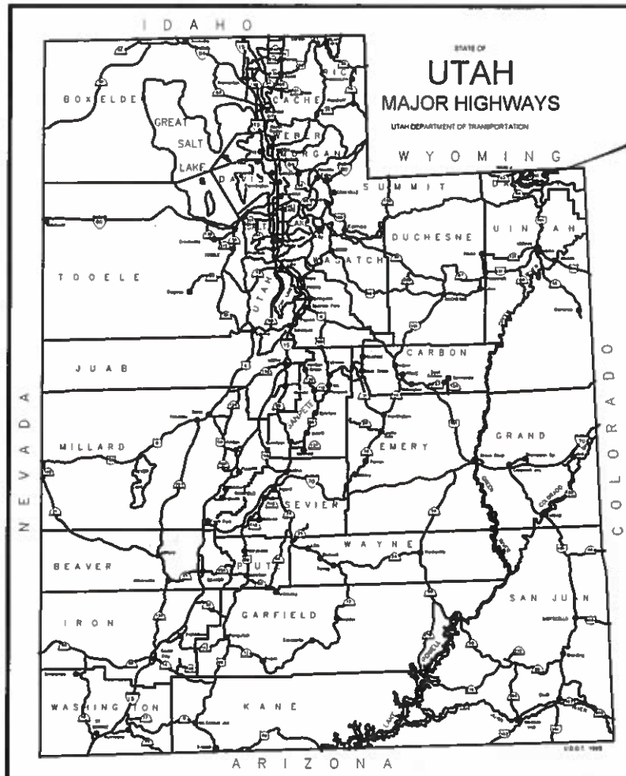
D. ASTM D 7322: Determination of Rolled Erosion Control Product (RECP) Ability to Encourage Seed Germination and Plant Growth Under Bench- Scale Conditions

E. ASTM D 7367: Determining Water Holding Capacity of Fiber Mulches for Hydraulic Planting

END OF ITEM T-908

Part 13 – Lighting Installation – Not Used

VII. Plans



PROJECT LOCATION

SHEET NO.
1

U.S. Standard Units
(Inch-Pound Units)

ALL UNITS IN FEET UNLESS OTHERWISE NOTED

DUTCH JOHN AIRPORT APRON CONSTRUCTION PROJECT

DUTCH JOHN, UTAH

CONSTRUCTION DRAWINGS

TO ROCK SPRINGS

TO MANILA

N

INDEX TO SHEETS		
SHEET NUMBER	NUMBER OF SHEETS	DESCRIPTION
1	1	TITLE
SC-01	1	SURVEY CONTROL
TS-01	1	TYPICAL SECTION
DT-01	1	DETAIL
SM-01 to SM-04	4	SUMMARY
PL-01	1	PLAN - APRON & TIEDOWN
GR-01	1	GRADE - APRON & TIEDOWN
SS-01	1	STRIPING - APRON & TIEDOWN
CS-01	1	CONSTRUCTION SAFETY PLAN
	10	ADDITIVE 1 - TAXIWAY
	6	ADDITIVE 2 - ADDITIONAL APRON

REGISTERED STRUCTURAL ENGINEER
153670
BRET ADRIAN REYNOLDS
1/20/2023
STATE OF UTAH

THIS SEAL APPLIES TO ALL SHEETS CONTAINING THIS SIGNATURE

VERIFIED FOR SUBMISSION FOR ADVERTISEMENT

1-20-23

REGISTERED PROFESSIONAL ENGINEER DATE

APPROVED FOR USE

1-31-2023

MATT TIPPETS - DAGGETT COUNTY

UTAH DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS

APPROVED FOR ADVERTISEMENT

1/30/2023

CRAIG IDE

All field work for the survey control was performed using Spectra Precision GPS equipment in March 2022. The survey was initiated by the RTK method using The Utah Reference Network (TURN) VRS services to obtain the NAD83 and NAVD88 positions. The Primary Control was established by, averaging 180 epochs recorded on each point.

BASIS OF COORDINATES

Survey Date:	March 17, 2022
Project Coordinates:	Local coordinates scaled and truncated from State Plane
State Plane Coordinates:	Utah Coordinate System 1983 North Zone (2011) Epoch 2010.0000
Project Datum:	NAD83 from The Utah Reference Network (VRS)
Vertical Datum:	NAVD88 from The Utah Reference Network (VRS)
Units:	US Survey Foot
Scale Factor:	1.0003369085 (derived from N 40°55'17.44457", W 109°23'43.88011", Height 6499.58)
Scale Origin:	N = 0, E = 0
Convergence Angle:	01°23'15.36" at N 40°55'17.44457", W 109°23'43.88011", Height 6499.58'
Geoid:	Geoid12B

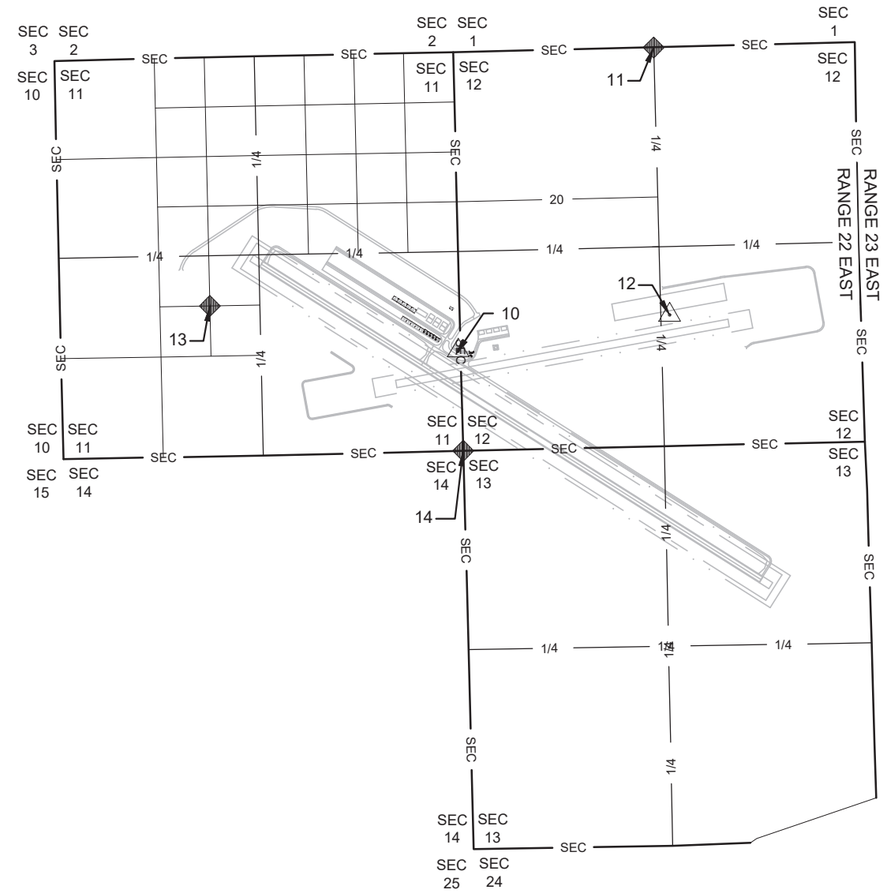
CONVERSIONS

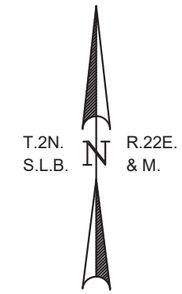
Parameters for conversion from State Plane Coordinates to Project Coordinates are as follows:

Scale Factor:	1.0003369085	
Offset Northing:	-3483348.346	(SP x Scale Factor – 3483348.346 = PRJ)
Offset Easting:	-2192687.808	(SP x Scale Factor – 2192687.808 = PRJ)

Parameters for conversion from Project Coordinates to State Plane Coordinates are as follows:

Scale Factor:	1.0003369085	
Offset Northing:	3483348.346	(PRJ + 3483348.346 / Scale Factor = SP)
Offset Easting:	2192687.808	(PRJ + 2192687.808 / Scale Factor = SP)





PROJECT CONTROL									
CONTROL POINT	LATITUDE NAD 83	LONGITUDE NAD 83	ELLIPSOID HEIGHT	STATE PLANE COORDINATES		PROJECT COORDINATES		ELEVATION	CONTROL POINT DESCRIPTION
				NORTHING	EASTING	NORTHING	EASTING		
10	40°55'17.44457"	109°23'43.88011"	6499.58	3502168.436	2221939.219	20000.000	30000.001	6545.37	MAG NAIL
11	40°55'56.66515"	109°23'08.71473"	6352.35	3506202.067	2224541.322	24034.990	32602.980	6398.22	BLM BRASS CAP, 1/4 COR. SEC. 1, 12
12	40°55'21.77661"	109°23'07.10105"	6481.93	3502675.262	2224751.056	20506.997	32812.785	6527.73	5/8" x 30" REBAR w/ PLASTIC CAP
13	40°55'24.32671"	109°24'26.10720"	6536.21	3502786.457	2218681.837	20618.229	26741.522	6582.03	3.5" BLM BRASS CAP, 1959, NW COR. SE1/4NE1/4SW1/4 SEC. 11
14	40°55'04.70744"	109°23'43.12629"	6507.15	3500881.167	2222028.287	18712.297	30089.099	6552.91	3.5" BLM BRASS CAP, 1958, SEC. 11, 12, 13, 14

REVISIONS

NO.	DATE	APPROVED BY

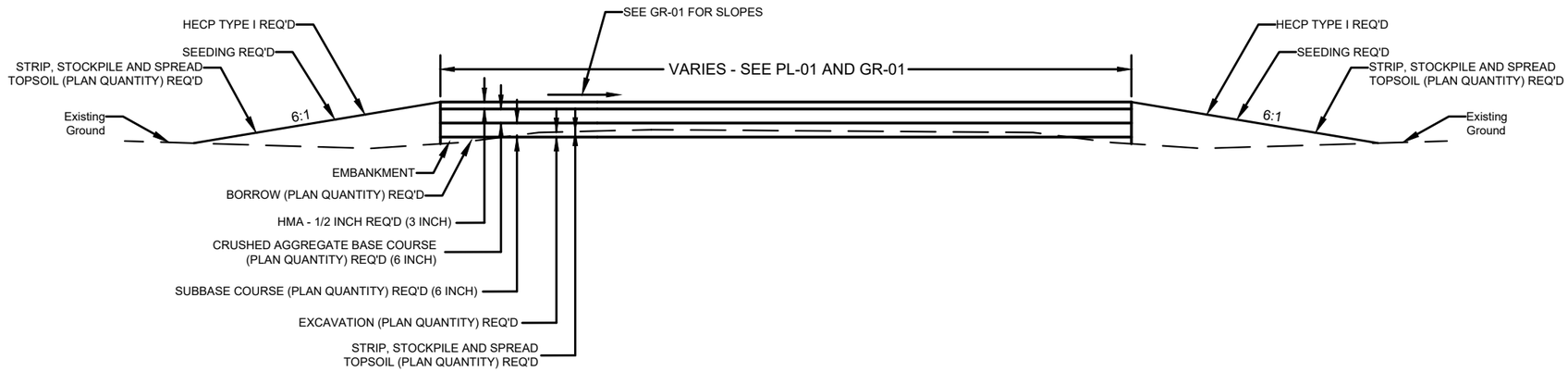
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: SRV
QC CHECKED BY: DWP
APPROVED: Daniel W. Peatross
PROFESSIONAL LAND SURVEYOR
04/27/2022
DATE

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
PHASE: APRON CONSTRUCTION
SURVEY CONTROL

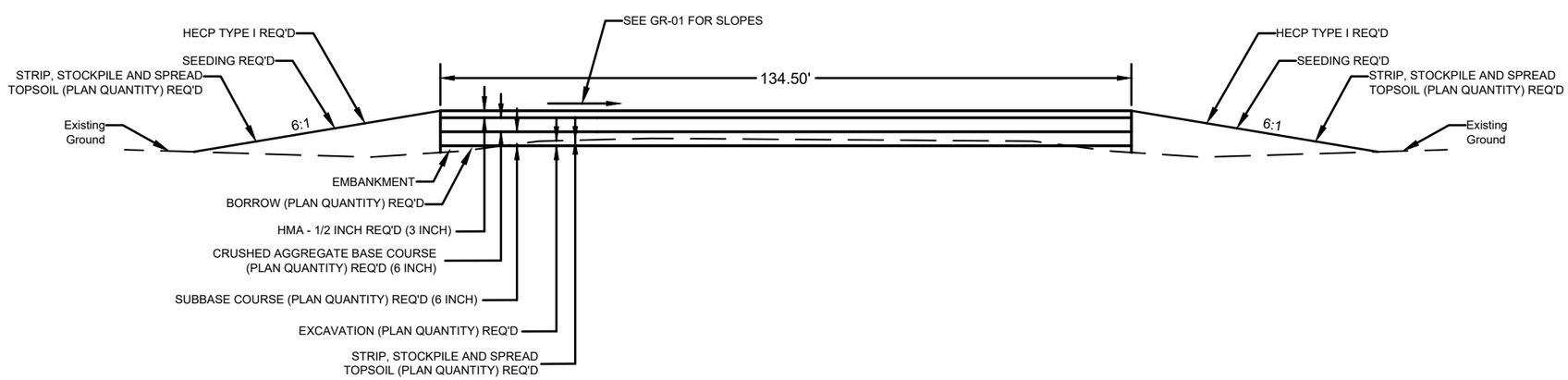
SHEET NO. SC-01

STYLE TABLE: jb civco 24x36.ctb LAST UPDATE:
SHT SET: DUTCH JOHN AIRPORT EXPANSION
DRAWING CREATED: 4/27/2022 DWG NAME: S:\1. PROJECTS\202204_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SURVEY DATA\SC-01



TYPICAL SECTION

TAXIWAY CONSTRUCTION
STA. 3+64.47 TO STA. 5+54.98
N.T.S.



TYPICAL SECTION

APRON CONSTRUCTION
STA. 5+54.98 TO STA. 9+80.48
N.T.S.

REVISIONS

NO.	DATE	APPROVED BY

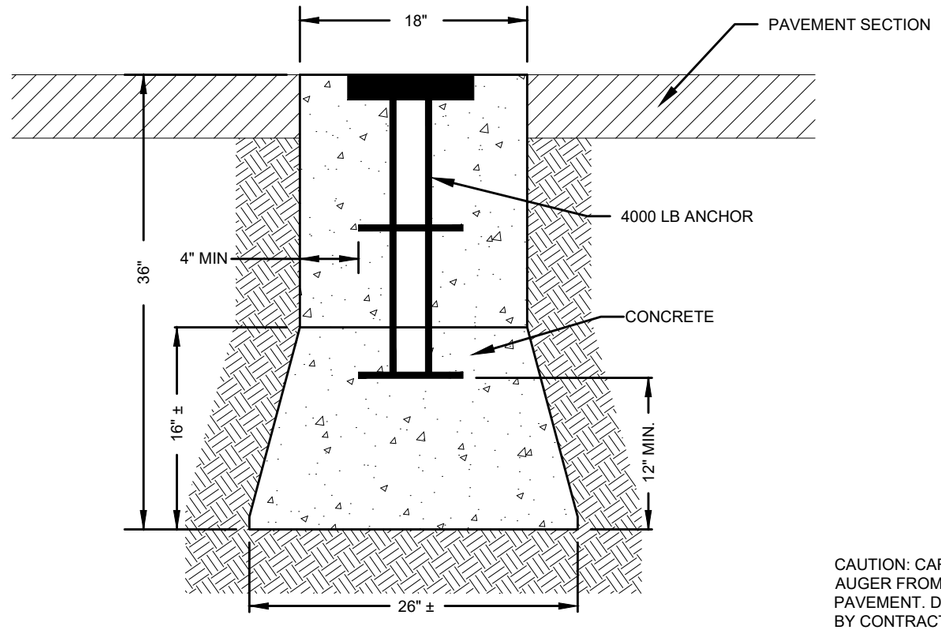
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
TYPICAL SECTION

SHEET NO. TS-01

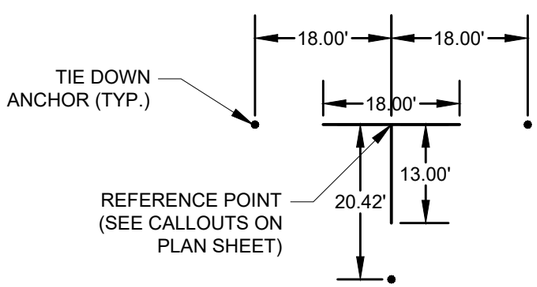
DRAWING CREATED: 1/25/2023 DWG NAME: S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\TS-01 SHT SET: DUTCH JOHN AIRPORT EXPANSION STYLE TABLE: civco.ctb LAST UPDATE:



TIE DOWN ANCHOR

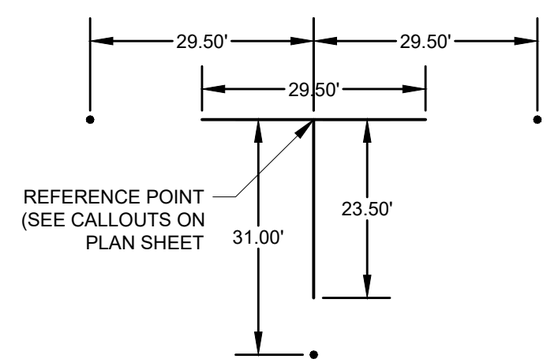
CAUTION: CARE SHOULD BE TAKEN TO REMOVE AUGER FROM HOLE WITHOUT RAISING OR DAMAGEING PAVEMENT. DAMAGED PAVEMENT SHALL BE REPAIRED BY CONTRACTOR AS APPROVED BY ENGINEER.

NOTE: TOP OF TIE DOWN ANCHOR TO BE FLUSH WITH TOP OF ASPHALT



TIE DOWN ANCHOR DIMENSIONS

TD-1, TD-2, TD-3, TD-4, TD-5



TIE DOWN ANCHOR DIMENSIONS

TD-6, TD-7

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY KHG
QC CHECKED BY BAR

CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

APPROVED: 1/12/2023
DATE
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
TIE DOWN ANCHOR

SHEET NO. DT-01

LAST UPDATE:
STYLE TABLE: civco.ctb
SHT SET: DUTCH JOHN AIRPORT EXPANSION
DWG NAME: S:\1. PROJECTS\202204_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\DT-01
DRAWING CREATED: 1/30/2023

SUMMARY OF ITEMS - BASE BID - APRON CONSTRUCTION

#	PAY ITEM NUMBER	PAY ITEM NAME	UNIT	QUANTITY	SHEET NUMBER
1	C-105	MOBILIZATION	LUMP	1	SM-01
2	152-4.2	EXCAVATION (PLAN QUANTITY)	CU YD	92	SM-02
3	152-4.3	BORROW (PLAN QUANTITY)	CU YD	2,864	SM-02
4	154-5.1	SUBBASE COURSE (PLAN QUANTITY)	CU YD	1,176	SM-02
5	160-5.1	TIEDOWN	EACH	7	SM-04
6	209-5.1	CRUSHED AGGREGATE BASE COURSE (PLAN QUANTITY)	CU YD	1,176	SM-02
7	401-8.1	HMA - 1/2 INCH	TON	1,207	SM-02
8	602-5.1	EMULSIFIED ASPHALT PRIME COAT	TON	6	SM-02
9	620-5.1	RUNWAY AND TAXIWAY MARKING PAINT	GALLON	4	SM-03
10	620-5.2	TEMPORARY RUNWAY AND TAXIWAY MARKING PAINT	GALLON	2	SM-03
11	901-5.1	SEEDING	1000 SQ FT	64	SM-04
12	905-5.1	STRIP, STOCKPILE AND SPREAD TOPSOIL (PLAN QUANTITY)	CU YD	1,176	SM-04
13	908-6.1	HECP TYPE I	1000 SQ FT	64	SM-04

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY KHG

QC CHECKED BY BAR

CTVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

1/12/2023
DATE

APPROVED:

PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY

PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION

SUMMARY OF ITEMS

SHEET NO. SM-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\SM-01 SUMMARY OF ITEMS.dwg 1/27/2023
DUTCH JOHN AIRPORT EXPANSION civco.ctb

EARTHWORK SUMMARY - BASE BID - APRON CONSTRUCTION

LINE	STATION				LENGTH	EXCAVATION (PLAN QUANTITY)	EXCAVATION X 0.87	EMBANKMENT	BORROW (PLAN QUANTITY)	REMARKS
	FROM	OFFSET	TO	OFFSET	FEET	CU YD	CU YD	CU YD	CU YD	
DUTCH JOHN AIRPORT	3+64.47		9+80.48		616	92	80	2,944	2,864	
TOTAL						92	*80	*2,944	2,864	

* FOR CONTRACTOR INFORMATION ONLY

SURFACING SUMMARY - BASE BID - APRON CONSTRUCTION

LINE	STATION				LENGTH	BASE COURSES								HOT MIX ASPHALT				EMULSIFIED ASPHALT PRIME COAT 0.20 GAL/YD²	REMARKS
						SUBBASE COURSE (PLAN QUANTITY)				CRUSHED AGGREGATE BASE COURSE (PLAN QUANTITY)				HMA - 1/2 INCH (PG 64-34) (152 LB/FT³)				(240 GAL/TON)	
	FROM	OFFSET	TO	OFFSET	FEET	AVG WIDTH FEET	DEPTH IN	VOL FT³	VOL YD³	AVG WIDTH FEET	DEPTH IN	VOL FT³	VOL YD³	AVG WIDTH FEET	DEPTH IN	VOL FT³	TON	TON	
DUTCH JOHN AIRPORT	3+64.47		9+80.48		616	103.1	6	31,751	1,176	103.1	6	31,751	1,176	103.1	3	15,876	1,207	5.9	
TOTAL									1,176				1,176				1,207	6	

REVISIONS

NO.	DATE	APPROVED BY

CTVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758 Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY KHG
QC CHECKED BY BAR
1/12/2023 DATE
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
EARTHWORK, SURFACING

SHEET NO. SM-02

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\SM-02 EARTHWORK SURFACING APRON EXPANSION.dwg 1/25/2023 civco.ctb

RUNWAY AND TAXIWAY MARKING - BASE BID - APRON CONSTRUCTION

	FROM		TO		6" YELLOW 230 FT/GAL SOLID		RUNWAY AND TAXIWAY MARKING PAINT	REMARKS
	STATION	OFFSET	STATION	OFFSET	FEET	GALLON	GALLON	
DUTCH JOHN AIRPORT	4+21.98	0.00 RT	9+80.48	0.00 RT	531.0	2.31	2.31	
DUTCH JOHN AIRPORT	6+26.48	66.06 LT	6+44.48	66.06 LT	18.0	0.08	0.08	TD-1
DUTCH JOHN AIRPORT	6+35.48	66.06 LT	6+35.48	79.06 LT	13.0	0.06	0.06	TD-1
DUTCH JOHN AIRPORT	6+72.48	66.06 LT	6+90.48	66.06 LT	18.0	0.08	0.08	TD-2
DUTCH JOHN AIRPORT	6+81.48	66.06 LT	6+81.48	79.06 LT	13.0	0.06	0.06	TD-2
DUTCH JOHN AIRPORT	7+18.48	66.06 LT	7+36.48	66.06 LT	18.0	0.08	0.08	TD-3
DUTCH JOHN AIRPORT	7+27.48	66.06 LT	7+27.48	79.06 LT	13.0	0.06	0.06	TD-3
DUTCH JOHN AIRPORT	7+64.48	66.06 LT	7+82.48	66.06 LT	18.0	0.08	0.08	TD-4
DUTCH JOHN AIRPORT	7+73.48	66.06 LT	7+73.48	79.06 LT	13.0	0.06	0.06	TD-4
DUTCH JOHN AIRPORT	8+10.48	66.06 LT	8+28.48	66.06 LT	18.0	0.08	0.08	TD-5
DUTCH JOHN AIRPORT	8+19.48	66.06 LT	8+19.48	79.06 LT	13.0	0.06	0.06	TD-5
DUTCH JOHN AIRPORT	8+62.23	73.50 LT	8+91.73	73.50 LT	29.5	0.13	0.13	TD-6
DUTCH JOHN AIRPORT	8+76.98	73.50 LT	8+76.98	97.00 LT	23.5	0.10	0.10	TD-6
DUTCH JOHN AIRPORT	9+31.23	73.50 LT	9+60.73	73.50 LT	29.5	0.13	0.13	TD-7
DUTCH JOHN AIRPORT	9+45.98	73.50 LT	9+45.98	97.00 LT	23.5	0.10	0.10	TD-7
RUNWAY AND TAXIWAY MARKING PAINT TOTAL					***792.00**	***3.44**	**4**	
TEMPORARY RUNWAY AND TAXIWAY MARKING PAINT TOTAL					***792.00**	***1.72**	**2**	

* FOR CONTRACTOR INFORMATION ONLY

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY KHG
QC CHECKED BY BAR

CTVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758 Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

1/12/2023
DATE

APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
RUNWAY AND TAXIWAY MARKING

SHEET NO. SM-03

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\SM-03 RUNWAY AND TAXIWAY MARKING DIVISION.dwg 1/25/2023 ctvco.ctb

TIE DOWN SUMMARY - BASE BID - APRON CONSTRUCTION				
LINE	STATION		TIE DOWN	REMARKS
	STATION	OFFSET	EACH	
DUTCH JOHN AIRPORT	6+35.48	66.06 LT	1	TD-1
DUTCH JOHN AIRPORT	6+81.48	66.06 LT	1	TD-2
DUTCH JOHN AIRPORT	7+27.48	66.06 LT	1	TD-3
DUTCH JOHN AIRPORT	7+73.48	66.06 LT	1	TD-4
DUTCH JOHN AIRPORT	8+19.48	66.06 LT	1	TD-5
DUTCH JOHN AIRPORT	8+76.98	73.50 LT	1	TD-6
DUTCH JOHN AIRPORT	9+45.98	73.50 LT	1	TD-7
TOTAL			7	

LANDSCAPING SUMMARY - BASE BID - APRON CONSTRUCTION						
LINE	FROM	TO	STRIP, STOCKPILE, AND SPREAD TOPSOIL (PLAN QUANTITY)*	SEEDING	HECP TYPE I	REMARKS
	STATION	STATION	CU YD	1000 SQ FT	1000 SQ FT	
DUTCH JOHN AIRPORT	3+64.47	9+80.48	1,176	13	13	
DUTCH JOHN AIRPORT				51	51	Waste Area
TOTAL			1,176	64	64	

* ASSUMES 6" DEEP

REVISIONS

NO.	DATE	APPROVED BY

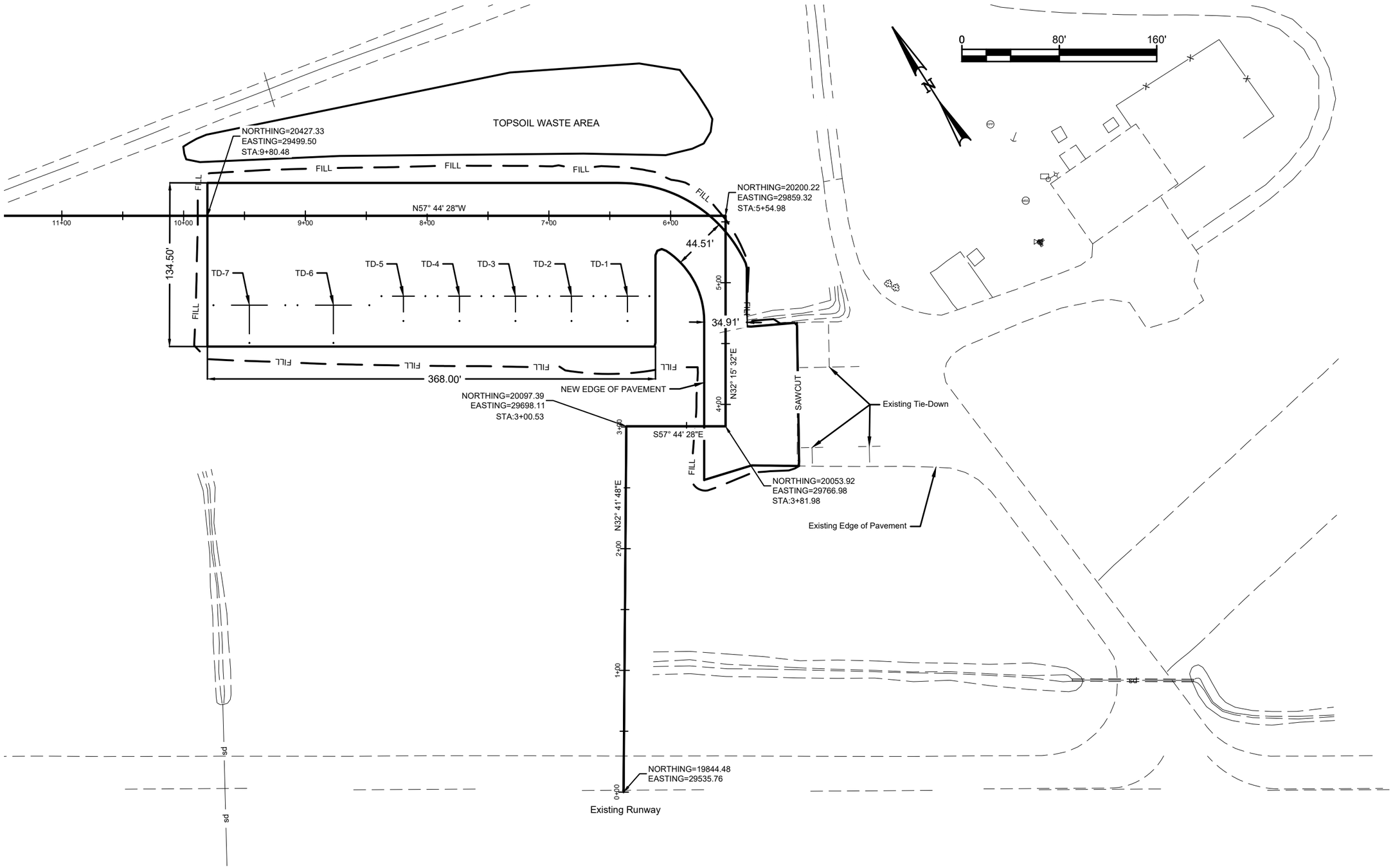
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758 Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY KHG
QC CHECKED BY BAR
DATE 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
TIE DOWN, LANDSCAPING

SHEET NO. SM-04

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\SM-04 PIPE CULVERT & TIE DOWN AIRPORT EXPANSION.dwg 1/25/2023 civco.ctb



TIE-DOWN REQ'D

[TD-1]	6+35.48	66.06	LT
[TD-2]	6+81.48	66.06	LT
[TD-3]	7+27.48	66.06	LT
[TD-4]	7+73.48	66.06	LT
[TD-5]	8+19.48	66.06	LT
[TD-6]	8+76.98	73.50	LT
[TD-7]	9+45.98	73.50	LT

NOTE: SEE DT-01

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023

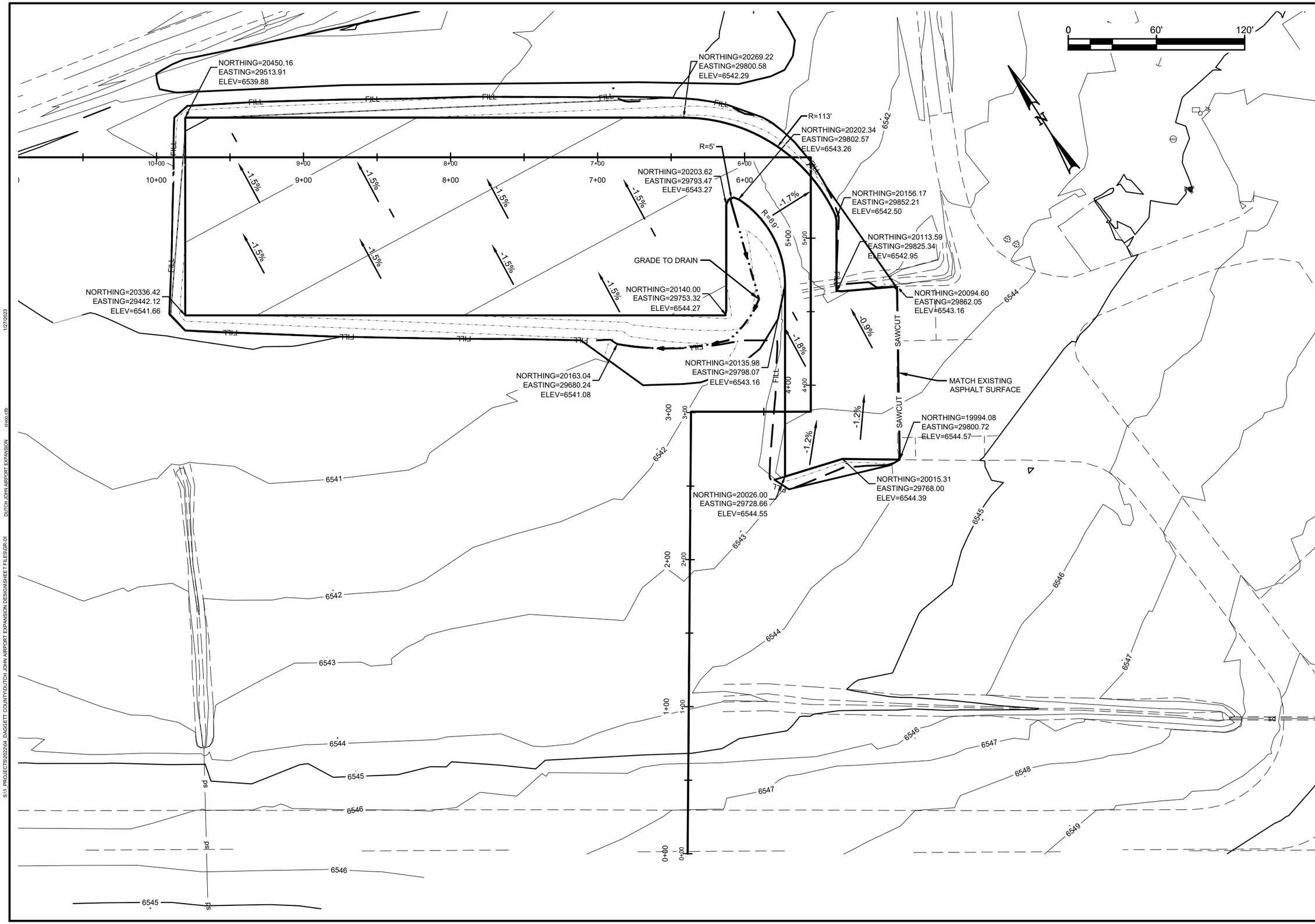
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
PLAN - APRON & TIEDOWN

SHEET NO. PL-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\PL-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/30/2023



REVISIONS

NO.	DATE	APPROVED BY

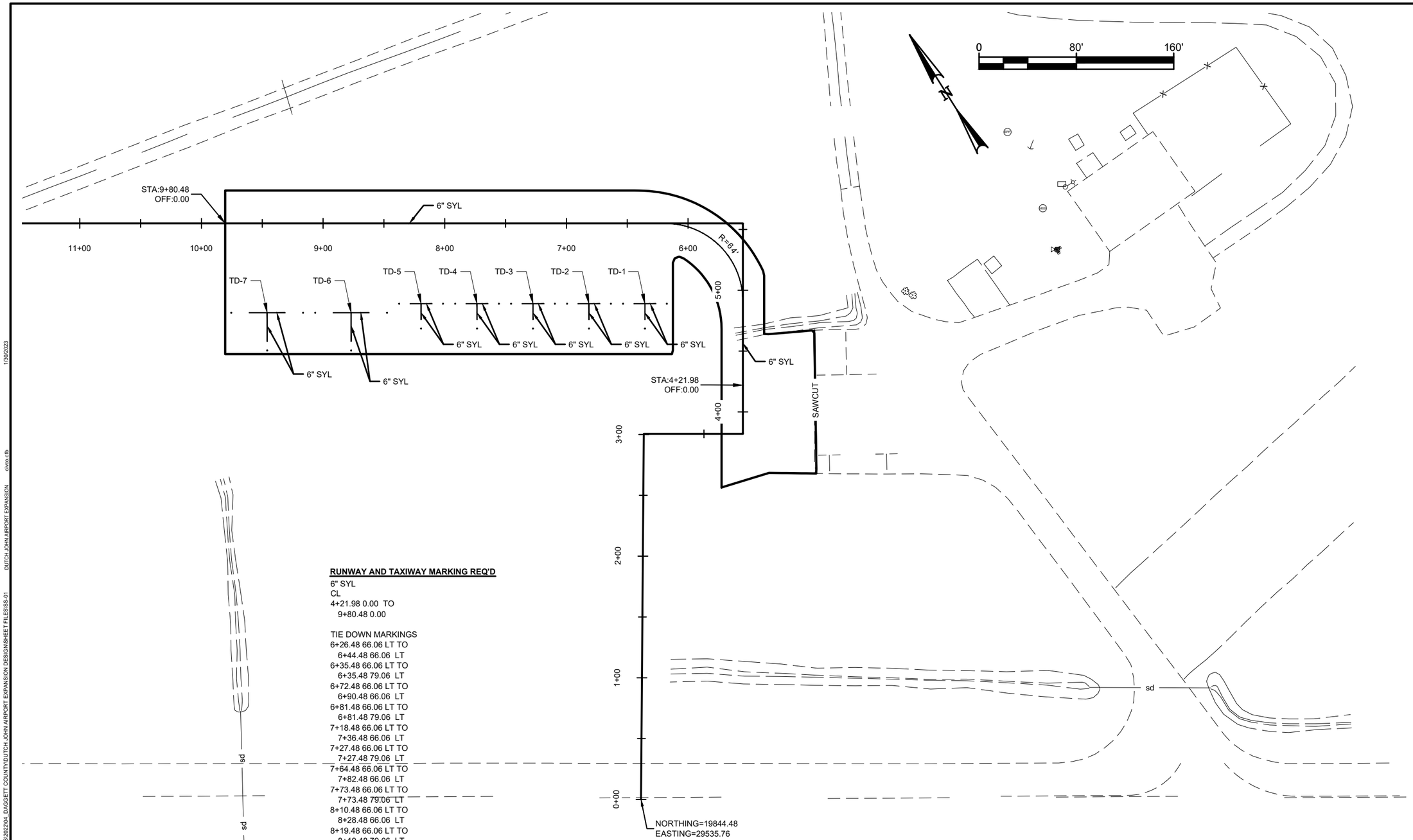
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
GRADE - APRON & TIEDOWN

SHEET NO. GR-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\GR-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/27/2023



RUNWAY AND TAXIWAY MARKING REQ'D

6" SYL
CL
4+21.98 0.00 TO
9+80.48 0.00

TIE DOWN MARKINGS
6+26.48 66.06 LT TO
6+44.48 66.06 LT
6+35.48 66.06 LT TO
6+35.48 79.06 LT
6+72.48 66.06 LT TO
6+90.48 66.06 LT
6+81.48 66.06 LT TO
6+81.48 79.06 LT
7+18.48 66.06 LT TO
7+36.48 66.06 LT
7+27.48 66.06 LT TO
7+27.48 79.06 LT
7+64.48 66.06 LT TO
7+82.48 66.06 LT
7+73.48 66.06 LT TO
7+73.48 79.06 LT
8+10.48 66.06 LT TO
8+28.48 66.06 LT
8+19.48 66.06 LT TO
8+19.48 79.06 LT
8+62.23 73.50 LT TO
8+91.73 73.50 LT
8+76.98 73.50 LT TO
8+76.98 97.00 LT
9+31.23 73.50 LT TO
9+60.73 73.50 LT
9+45.98 73.50 LT TO
9+45.98 97.00 LT

NOTE: SEE DT-01

STRIPING KEY
SYL = SINGLE YELLOW LINE
BYL = BROKEN YELLOW LINE

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023

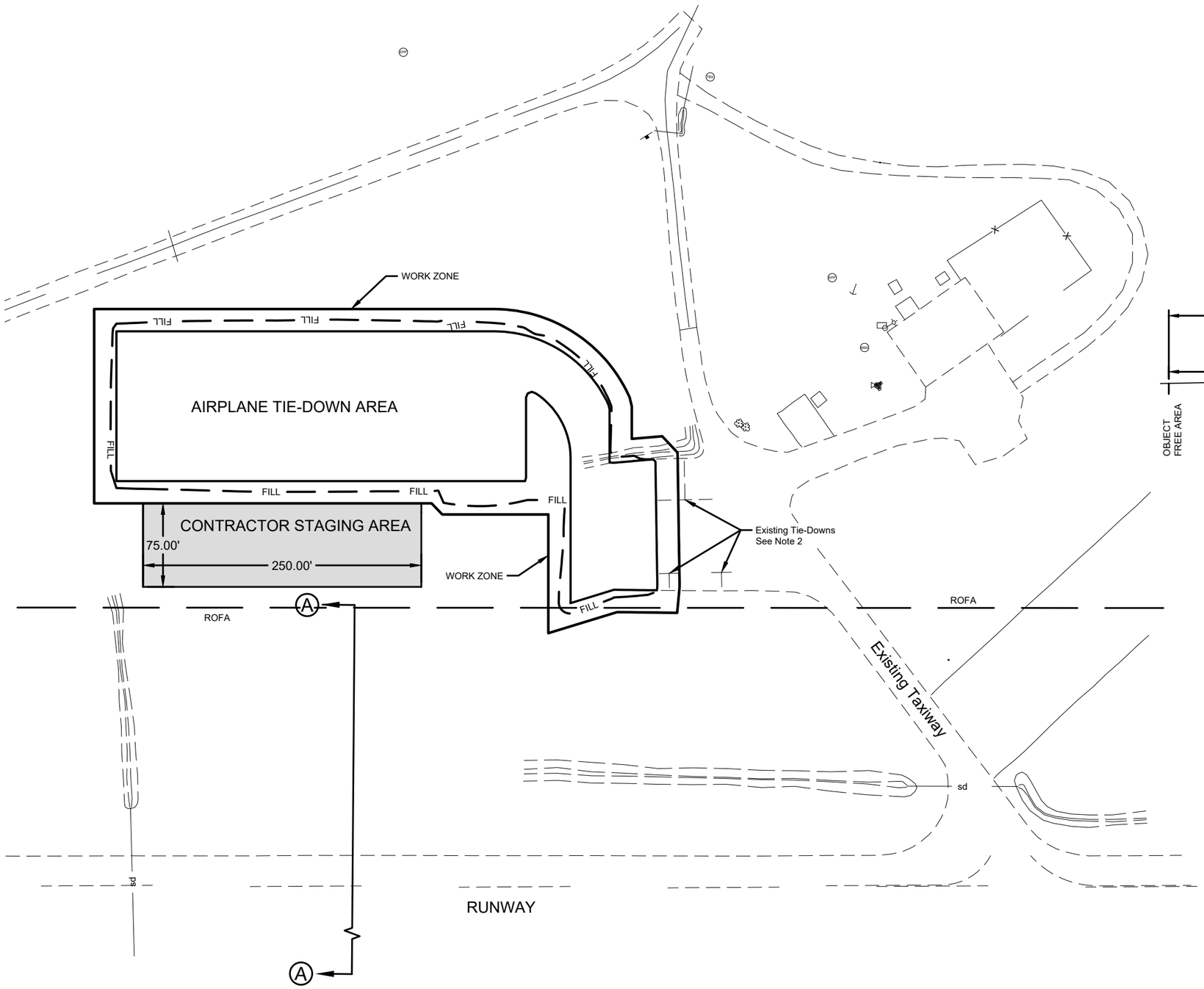
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

APPROVED:
PROFESSIONAL ENGINEER

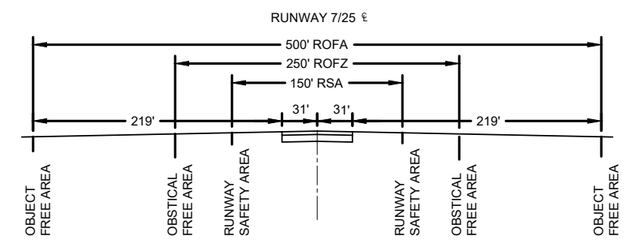
OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
STRIPING - APRON & TIEDOWN

SHEET NO. SS-01

S:\1 PROJECTS\202204 DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\SS-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/30/2023



CONTRACTOR STAGING AREA
NOT TO SCALE



SAFETY AREAS A-A
NOT TO SCALE

ALL STATIONARY CONSTRUCTION EQUIPMENT AND STOCKPILES MUST REMAIN CLEAR OF ANY OPEN RUNWAY OBJECT FREE AREA. (ROFA)
ALL CONSTRUCTION EQUIPMENT AND TRAFFIC MUST REMAIN CLEAR OF ANY OPEN RUNWAY OBSTACLE FREE ZONE. (ROFZ)

NOTES
1: MAINTAIN ACCESS TO EXISTING TIE-DOWNS UNTIL NEW TIE-DOWNS ARE OPERATIONAL.

CONSTRUCTION SAFETY AND PHASING PLAN

REVISIONS

NO.	DATE	APPROVED BY

CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
CONSTRUCTION SAFETY PLAN

SHEET NO. CS-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\CS-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/25/2023

SHEET NO.
A1_1

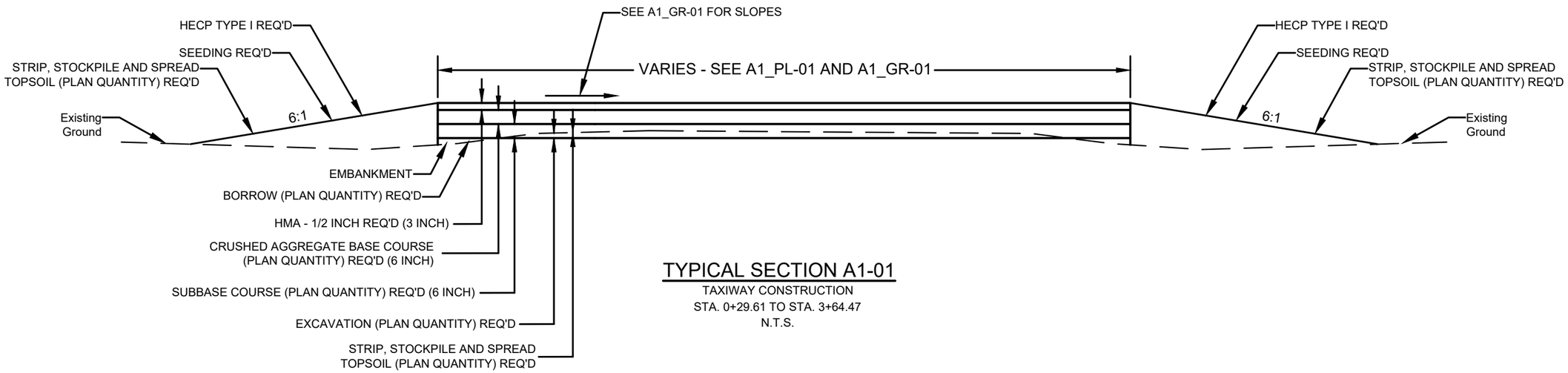
U.S. Standard Units
(Inch-Pound Units)

ALL UNITS IN FEET UNLESS OTHERWISE NOTED

DUTCH JOHN AIRPORT
APRON CONSTRUCTION PROJECT
ADDITIVE 1 - TAXIWAY

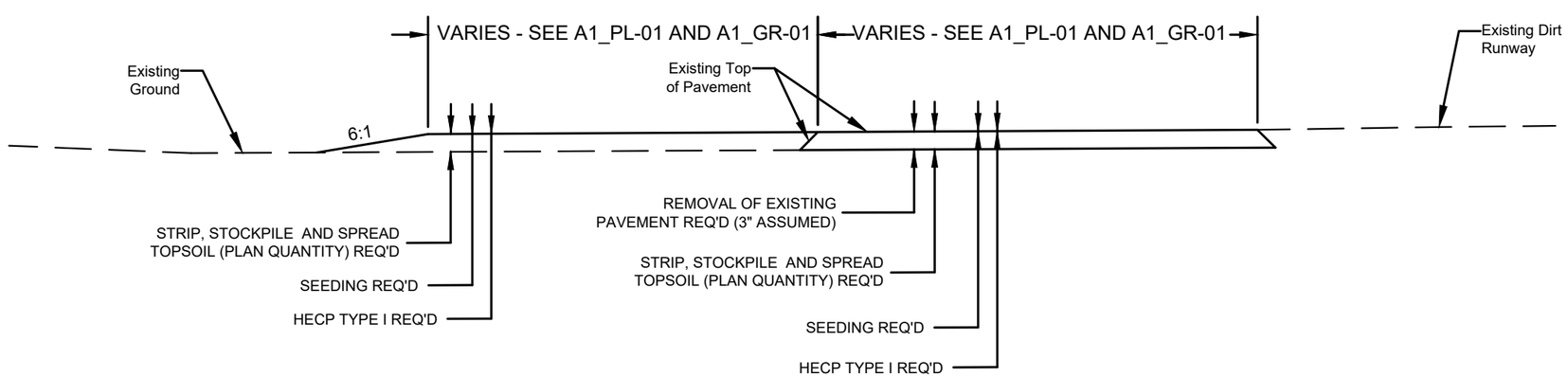
INDEX TO SHEETS - ADDITIVE 1 - TAXIWAY

SHEET NUMBER	NUMBER OF SHEETS	DESCRIPTION
A1_1	1	TITLE - TAXIWAY
A1_TS-01	1	TYPICAL SECTION - TAXIWAY
A1_DT-01	1	DRAINAGE DETAIL - TAXIWAY
A1_SM-01 to SM-03	3	SUMMARY - TAXIWAY
A1_PL-01	1	PLAN - TAXIWAY
A1_GR-01	1	GRADE - TAXIWAY
A1_DR-01	1	DRAINAGE - TAXIWAY
A1_SS-01	1	STRIPING - TAXIWAY
A1_CS-01	1	CONSTRUCTION SAFETY PLAN - TAXIWAY



TYPICAL SECTION A1-01

TAXIWAY CONSTRUCTION
STA. 0+29.61 TO STA. 3+64.47
N.T.S.



TYPICAL SECTION A1-02

REMOVAL OF EXISTING TAXIWAY, AND
DIRT TAXIWAY RECONSTRUCTION

REVISIONS

NO.	DATE	APPROVED BY

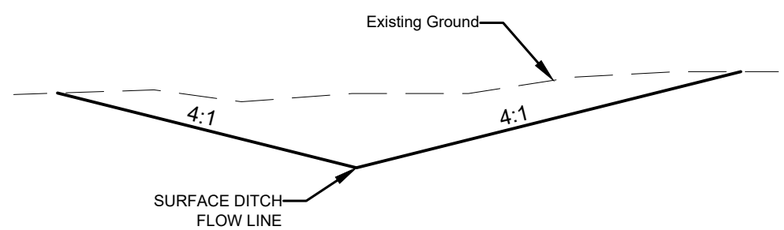
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
TYPICAL SECTION - TAXIWAY

SHEET NO. A1_TS-01

LAST UPDATE:
STYLE TABLE: civco.ctb
SHT SET: DUTCH JOHN AIRPORT EXPANSION
DRAWING CREATED: 1/26/2023 DWG NAME: S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_TS-01



DRAINAGE EXCAVATION

REVISIONS

NO.	DATE	APPROVED BY

CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY KHG
QC CHECKED BY BAR
1/12/2023
DATE
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
DRAINAGE DETAIL - TAXIWAY

SHEET NO. A1_DT-01

DRAWING CREATED: 1/19/2023 DWG NAME: S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_DT-01 SHT SET: DUTCH JOHN AIRPORT EXPANSION STYLE TABLE: civco.ctb LAST UPDATE:

SUMMARY OF ITEMS - ADDITIVE 1 - TAXIWAY

#	PAY ITEM NUMBER	PAY ITEM NAME	UNIT	QUANTITY	SHEET NUMBER
1	C-105	MOBILIZATION	LUMP	1	A1_SM-01
2	101-5.1	REMOVAL OF EXISTING PAVEMENT	SQ YD	853	A1_SM-02
3	152-4.1	DRAINAGE EXCAVATION	FT	498	A1_SM-02
4	152-4.2	EXCAVATION (PLAN QUANTITY)	CU YD	81	A1_SM-02
5	152-4.3	BORROW (PLAN QUANTITY)	CU YD	816	A1_SM-02
6	154-5.1	SUBBASE COURSE (PLAN QUANTITY)	CU YD	488	A1_SM-02
7	209-5.1	CRUSHED AGGREGATE BASE COURSE (PLAN QUANTITY)	CU YD	488	A1_SM-02
8	401-8.1	HMA - 1/2 INCH	TON	500	A1_SM-02
9	602-5.1	EMULSIFIED ASPHALT PRIME COAT	TON	3	A1_SM-02
10	620-5.3	REMOVAL OF EXISTING RUNWAY AND TAXIWAY MARKING	FT	310	A1_SM-03
11	620-5.1	RUNWAY AND TAXIWAY MARKING PAINT	GALLON	5	A1_SM-03
12	620-5.2	TEMPORARY RUNWAY AND TAXIWAY MARKING PAINT	GALLON	2	A1_SM-03
13	701-5.1	DRAINAGE PIPE - 18 INCH, STEEL, SILT-TIGHT	FT	110	A1_SM-03
14	701-5.2	DRAINAGE PIPE - 24 INCH, STEEL, SILT-TIGHT	FT	90	A1_SM-03
15	901-5.1	SEEDING	1000 SQ FT	26	A1_SM-02
16	905-5.1	STRIP, STOCKPILE AND SPREAD TOPSOIL (PLAN QUANTITY)	CU YD	488	A1_SM-02
17	908-6.1	HECP TYPE I	1000 SQ FT	26	A1_SM-02

REVISIONS

NO.	DATE	APPROVED BY

CTVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758 Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY KHG
QC CHECKED BY BAR
1/12/2023 DATE
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
SUMMARY OF ITEMS - TAXIWAY

SHEET NO. A1_SM-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_SM-01 SUMMARY OF ITEMS - TAXIWAY.dwg 1/27/2023
APRON EXPANSION civco.ctb

EARTHWORK SUMMARY - ADDITIVE 1 - TAXIWAY

LINE	STATION				LENGTH	EXCAVATION (PLAN QUANTITY)	EXCAVATION X 0.87	EMBANKMENT	BORROW (PLAN QUANTITY)	DRAINAGE EXCAVATION	REMARKS
	FROM	OFFSET	TO	OFFSET	FEET	CU YD	CU YD	CU YD	CU YD	FOOT	
DUTCH JOHN AIRPORT	0+29.61		3+64.47		335	81	70	886	816		
DUTCH JOHN AIRPORT	0+93.31	329.30 LT	1+02.72	54.53 LT						275	
DUTCH JOHN AIRPORT	0+99.80	277.97 RT	1+06.48	55.40 RT						223	
TOTAL						81	*70	*886	816	498	

* FOR CONTRACTOR INFORMATION ONLY

SURFACING SUMMARY - ADDITIVE 1 - TAXIWAY

LINE	STATION				LENGTH	BASE COURSES								HOT MIX ASPHALT				EMULSIFIED ASPHALT PRIME COAT 0.20 GAL/YD²	REMOVAL OF EXISTING PAVEMENT	REMARKS
						SUBBASE COURSE (PLAN QUANTITY)				CRUSHED AGGREGATE BASE COURSE (PLAN QUANTITY)				HMA - 1/2" (PG 64-34)						
														(152 LB/FT³)				(240 GAL/TON)		
	FROM	OFFSET	TO	OFFSET	FEET	AVG WIDTH	DEPTH	VOL	VOL	AVG WIDTH	DEPTH	VOL	VOL	AVG WIDTH	DEPTH	VOL	TON	TON		
						FEET	IN	FT³	YD³	FEET	IN	FT³	YD³	FEET	IN	FT³			YD²	
DUTCH JOHN AIRPORT	0+29.61		3+64.47		335	78.7	6	13,171	488	78.7	6	13,171	488	78.7	3	6,586	500	2.4		
DUTCH JOHN AIRPORT	0+33.06	437.12 RT	1+67.64	378.08 RT	135														853.3	
TOTAL									488				488				500	3	853	

LANDSCAPING SUMMARY - ADDITIVE 1 - TAXIWAY

LINE	FROM	TO	STRIP, STOCKPILE, AND SPREAD TOPSOIL (PLAN QUANTITY)*	SEEDING	HECP TYPE I	REMARKS
	STATION	STATION	CU YD	1000 SQ FT	1000 SQ FT	
DUTCH JOHN AIRPORT	0+29.61	3+64.47	488			
DUTCH JOHN AIRPORT	0+33.06	1+67.64		7	7	Existing Asphalt Removal
DUTCH JOHN AIRPORT	0+31.07	1+58.65		11	11	Dirt Runway Repair
DUTCH JOHN AIRPORT				8	8	Waste Area
TOTAL			488	26	26	

* ASSUMES 6" DEEP

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY KHG
QC CHECKED BY BAR

CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

1/12/2023
DATE

APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT APRON CONSTRUCTION
EARTHWORK, SURFACING, LANDSCAPING - TAXIWAY

SHEET NO. A1_SM-02

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_SM-02 EARTHWORK & SURFACING EXPANSION_civco.ctb 1/25/2023

PIPE CULVERT SUMMARY - ADDITIVE 1 - TAXIWAY

LINE	STATION FROM		STATION TO		DRAINAGE PIPE - 18 INCH, STEEL, SILT-TIGHT	DRAINAGE PIPE - 24 INCH, STEEL, SILT-TIGHT	REMARKS
	STATION	OFFSET	STATION	OFFSET	FOOT	FOOT	
DUTCH JOHN AIRPORT	0+94.86	367.84 RT	0+99.80	277.97 RT		90	
DUTCH JOHN AIRPORT	1+02.72	54.53 LT	1+06.48	55.40 RT	110		
TOTAL					110	90	

RUNWAY AND TAXIWAY MARKING - ADDITIVE 1 - TAXIWAY

	FROM		TO		6" YELLOW 230 FT/GAL SOLID		12" YELLOW 115 FT/GAL SOLID		12" YELLOW 230 FT/GAL BROKEN		RUNWAY AND TAXIWAY MARKING PAINT	REMOVAL OF EXISTING RUNWAY AND TAXIWAY MARKING	REMARKS
	STATION	OFFSET	STATION	OFFSET	FOOT	GALLON	FOOT	GALLON	FOOT	GALLON	GALLON	FOOT	
DUTCH JOHN AIRPORT	0+02.31	139.46 LT	2+01.01	0.00 RT	321.4	1.40					1.40		
DUTCH JOHN AIRPORT	0+02.73	140.57 RT	0+41.96	0.00 RT	162.3	0.71					0.71		
DUTCH JOHN AIRPORT	0+04.90	295.75 RT	0+33.09	443.30 RT								158	
DUTCH JOHN AIRPORT	0+07.75	623.44 RT	0+33.28	479.28 RT								152	
DUTCH JOHN AIRPORT	2+02.51	36.85 LT	2+02.51	35.91 RT			72.8	0.63			0.63		Runway Holding Position Marking
DUTCH JOHN AIRPORT	2+04.51	37.39 LT	2+04.51	36.41 RT			73.8	0.64			0.64		Runway Holding Position Marking
DUTCH JOHN AIRPORT	2+06.51	37.92 LT	2+06.51	36.91 RT					74.8	0.33	0.33		Runway Holding Position Marking
DUTCH JOHN AIRPORT	2+08.51	38.45 LT	2+08.51	37.41 RT					75.9	0.33	0.33		Runway Holding Position Marking
DUTCH JOHN AIRPORT	2+12.01	0.00 RT	4+21.98	0.00 RT	176.0	0.77					0.77		
RUNWAY AND TAXIWAY MARKING PAINT TOTAL					*659.70	*2.87	*146.56	*1.27	*150.69	*0.66	5		
TEMPORARY RUNWAY AND TAXIWAY MARKING PAINT TOTAL					*659.70	*2.87	*146.56	*1.27	*150.69	*0.66	2		
TOTAL												310	

* FOR CONTRACTOR INFORMATION ONLY

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY KHG
QC CHECKED BY BAR

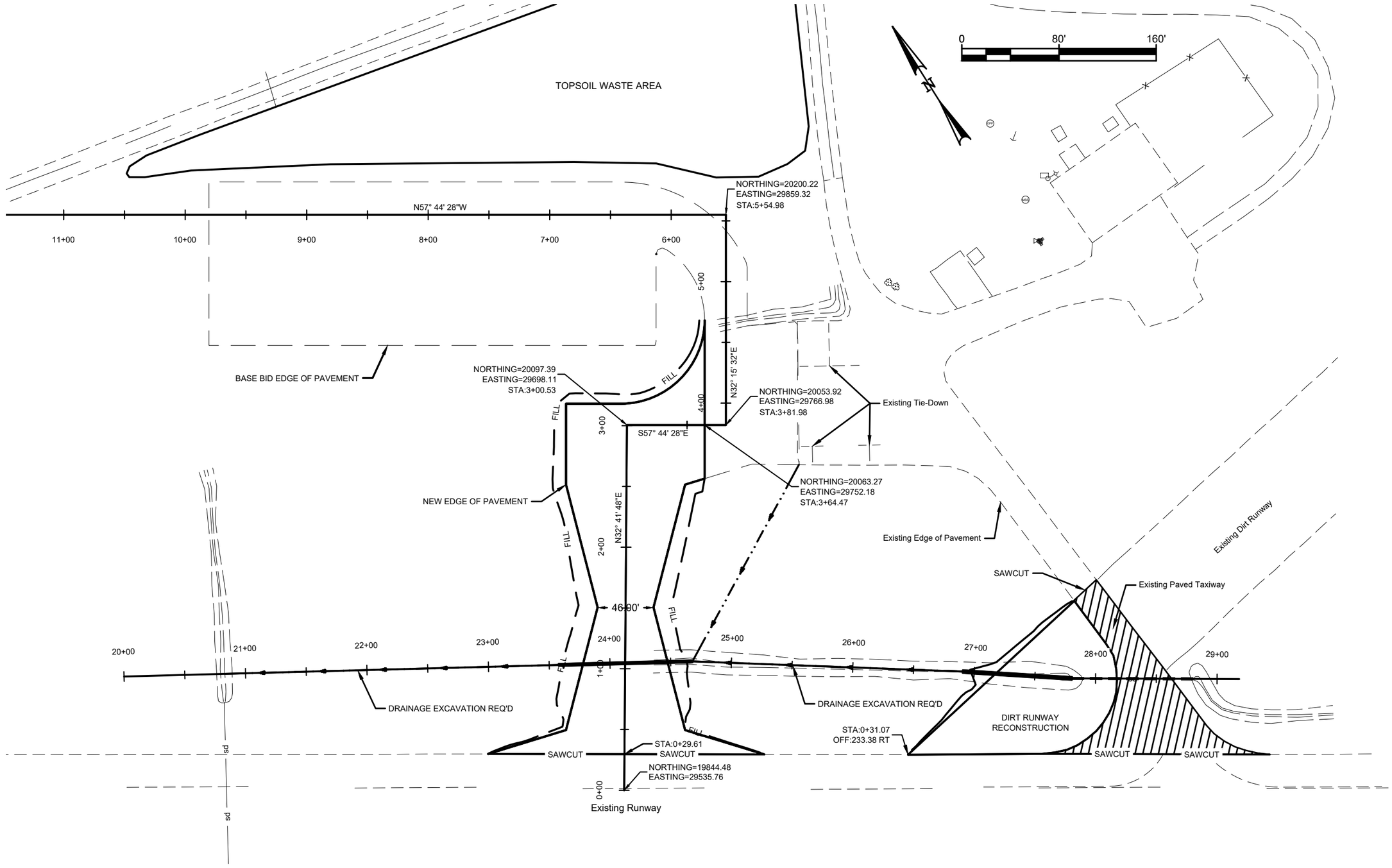
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758 Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

APPROVED: 1/12/2023 DATE
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT APRON CONSTRUCTION
PIPE CULVERT, RUNWAY AND TAXIWAY MARKING - TAXIWAY

SHEET NO. A1_SM-03

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_SM-03 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/25/2023



LEGEND

REMOVE ASHPALT PAVEMENT

DRAINAGE EXCAVATION REQ'D
0+93.31 329.30 LT TO
1+02.72 54.53 LT
0+99.80 277.97 RT TO
1+06.48 55.40 RT
9+69.35 115.21 LT TO
10+50.30 111.83 LT

DRAINAGE PIPE - 24 INCH, STEEL, SILT-TIGHT REQ'D
0+94.86 367.84 RT TO
0+99.80 277.97 RT

DRAINAGE PIPE - 18 INCH, STEEL, SILT-TIGHT REQ'D
1+02.72 54.53 LT TO
1+06.48 55.40 RT

REMOVAL OF EXISTING PAVEMENT REQ'D
0+33.06 437.12 RT TO
1+67.64 378.08 RT

REMOVAL OF EXISTING RUNWAY AND TAXIWAY MARKING REQ'D
0+04.90 295.75 RT TO
0+33.09 443.30 RT
0+07.75 623.44 RT TO
0+33.28 479.28 RT

REVISIONS

NO.	DATE	APPROVED BY

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1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
PLAN - TAXIWAY

SHEET NO. A1_PL-01

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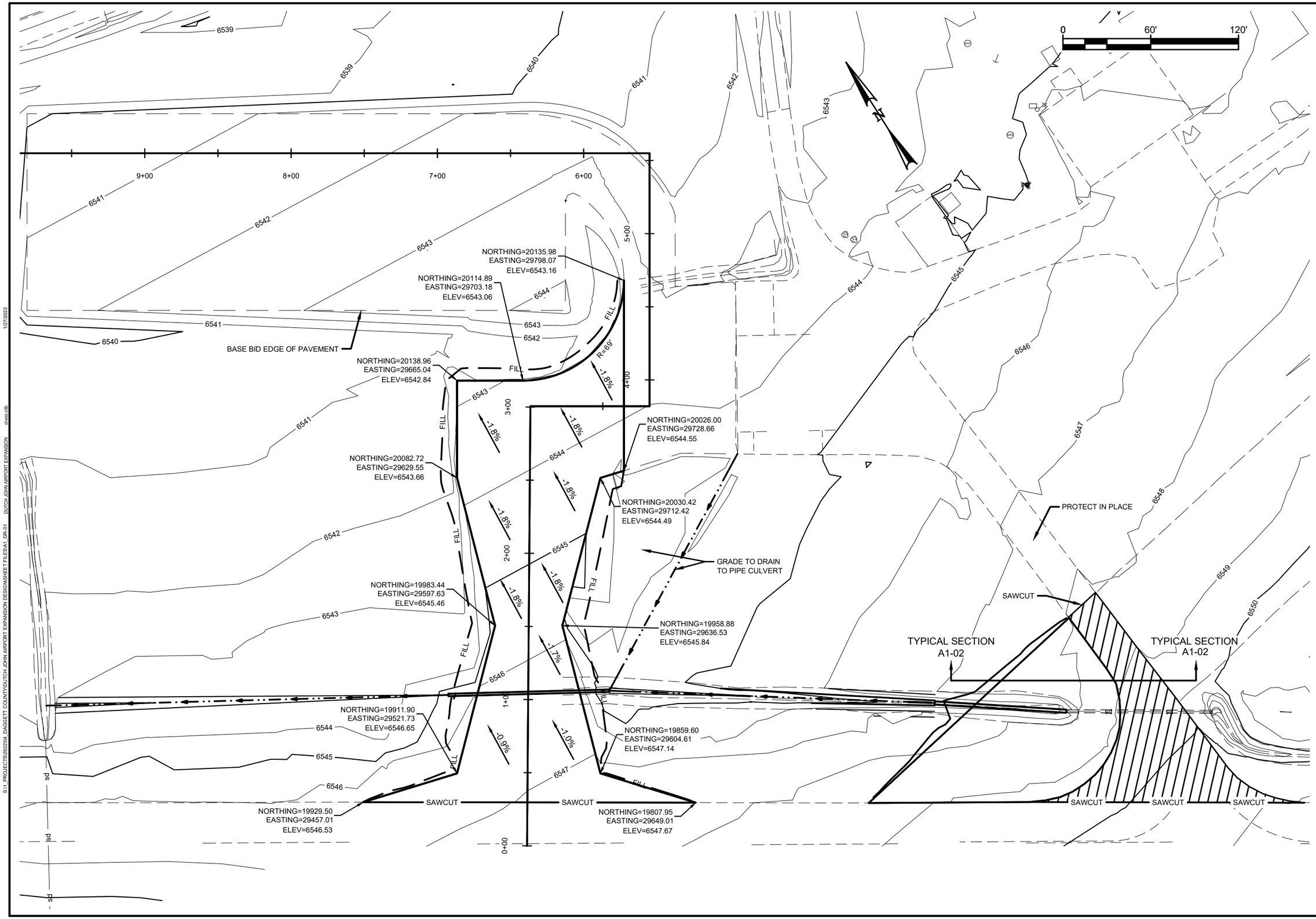

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DATE: 1/12/2023

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Telephone: (435) 789-5448 Fax: (435) 789-4485

APPROVED:

PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY

PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION

GRADE - TAXIWAY

SHEET NO. A1_GR-01

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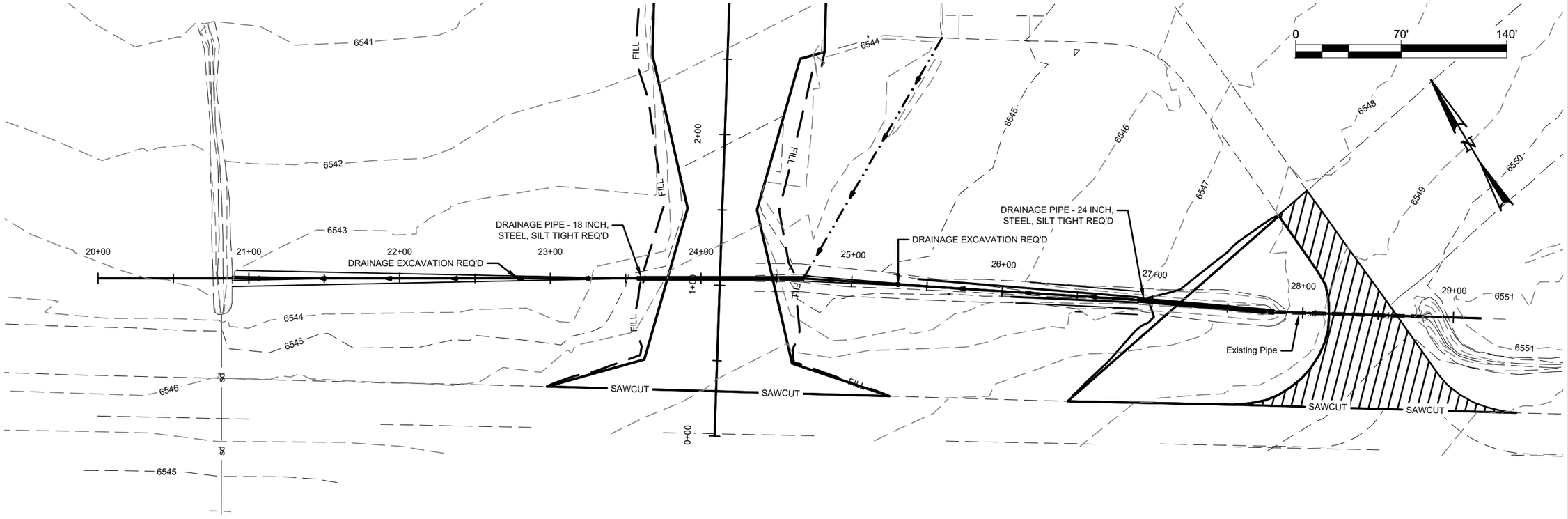

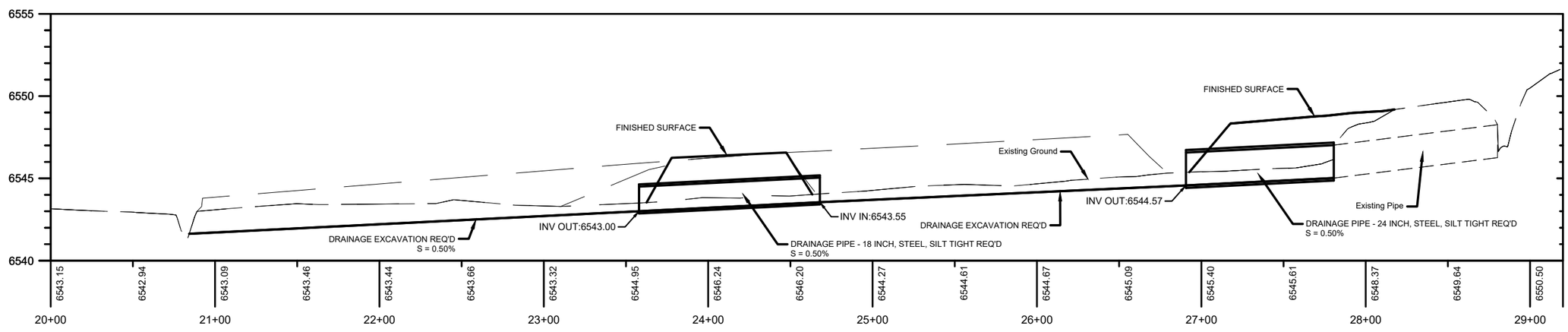

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1256 W. 400 S. STE. 1 P.O. Box 1758 Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

1/12/2023
DATE

APPROVED:
PROFESSIONAL ENGINEER

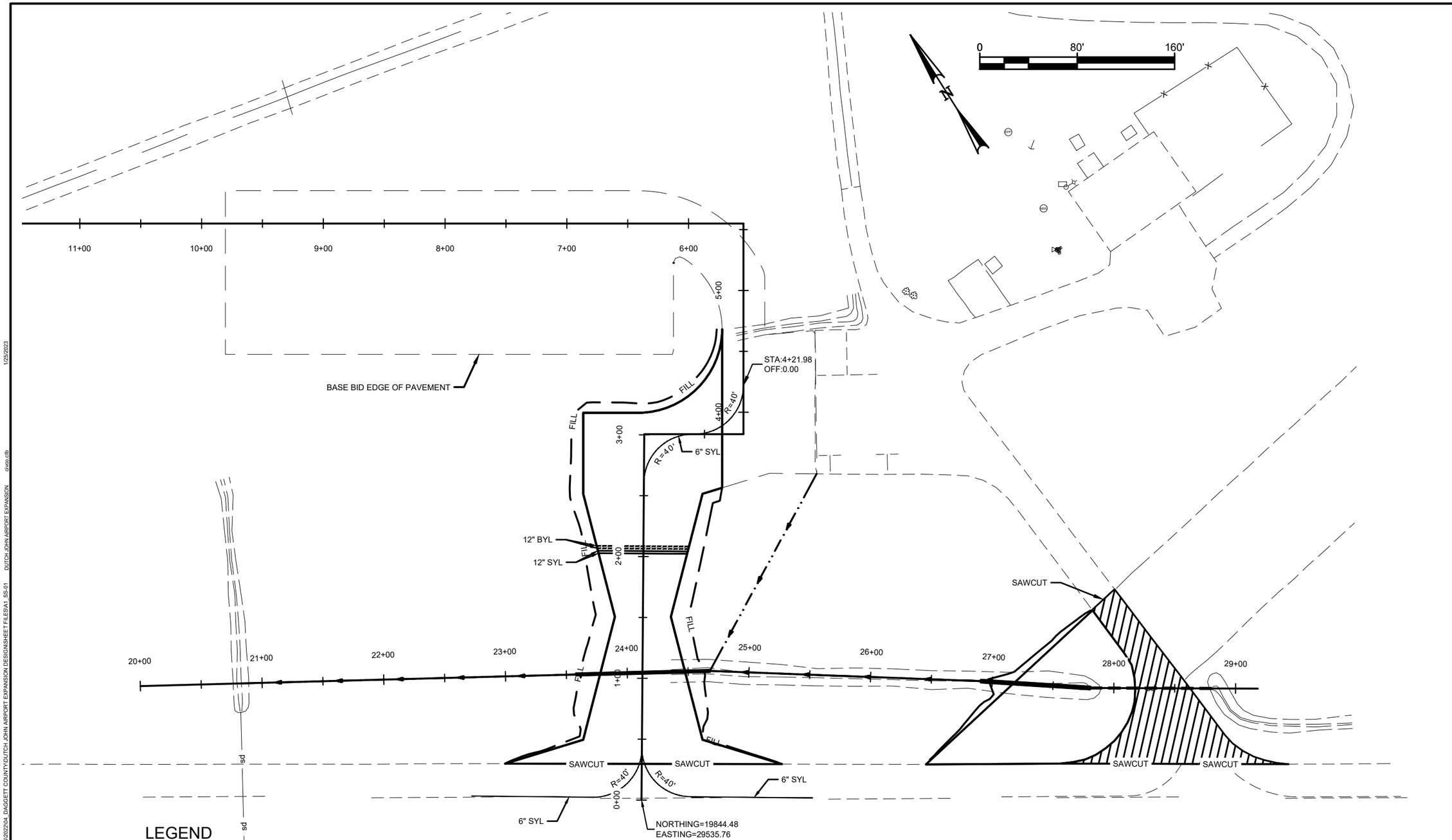
OWNER: DAGGETT COUNTY

PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION

DRAINAGE - TAXIWAY

SHEET NO. A1_DR-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_DR-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/25/2023



LEGEND

REMOVE ASHPALT PAVEMENT

STRIPING KEY
SYL = SINGLE YELLOW LINE
BYL = BROKEN YELLOW LINE

RUNWAY AND TAXIWAY MARKING REQ'D

6" SYL
CL
0+02.31 139.46 LT TO
2+01.01 0.00
0+02.73 140.57 RT TO
0+41.96 0.00
2+12.01 0.00 TO
4+21.98 0.00

12" SYL
RUNWAY HOLDING POSITION MARKINGS
2+02.51 36.85 LT TO
2+02.51 35.91 RT
2+04.51 37.39 LT TO
2+04.51 36.41 RT

12" BYL
RUNWAY HOLDING POSITION MARKINGS
2+06.51 37.92 LT TO
2+06.51 36.91 RT
2+08.51 38.45 LT TO
2+08.51 37.41 RT

REVISIONS

NO.	DATE	APPROVED BY

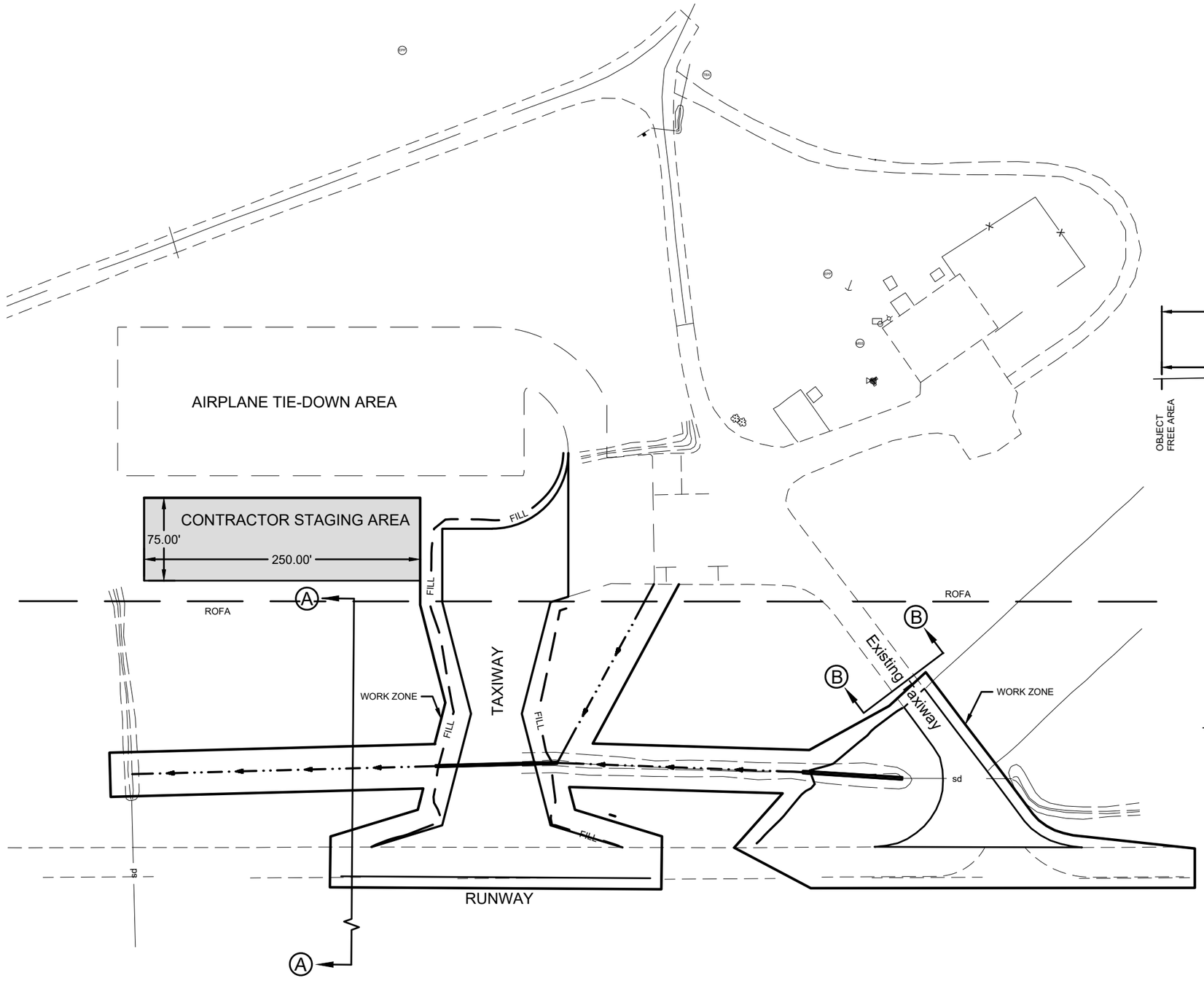
CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

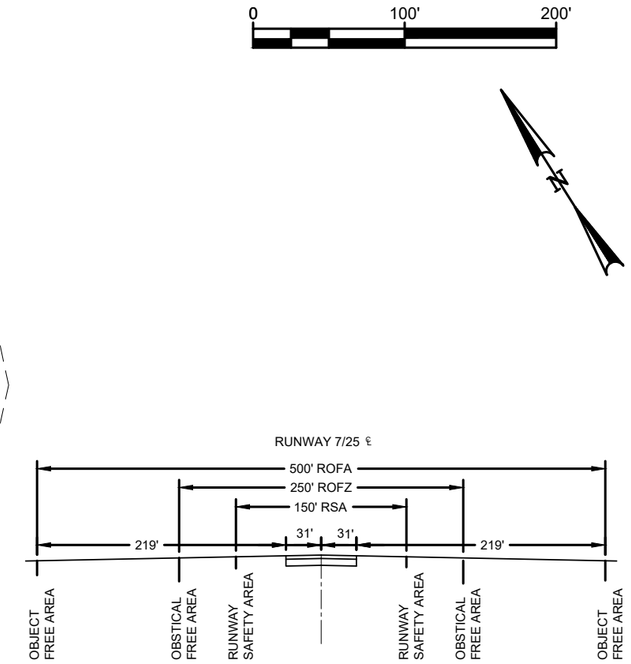
OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
STRIPING - TAXIWAY

SHEET NO. A1_SS-01

S:\1_PROJECTS\202204_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_SS-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/25/2023

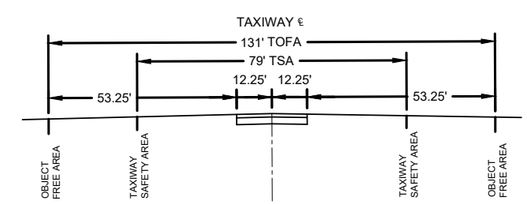


CONTRACTOR STAGING AREA
NOT TO SCALE



SAFETY AREAS A-A
NOT TO SCALE

ALL STATIONARY CONSTRUCTION EQUIPMENT AND STOCKPILES MUST REMAIN CLEAR OF ANY OPEN RUNWAY OBJECT FREE AREA. (ROFA)
ALL CONSTRUCTION EQUIPMENT AND TRAFFIC MUST REMAIN CLEAR OF ANY OPEN RUNWAY OBSTACLE FREE ZONE. (ROFZ)



SAFETY AREAS B-B
NOT TO SCALE

ALL STATIONARY CONSTRUCTION EQUIPMENT, STOCKPILES, AND TRAFFIC MUST REMAIN CLEAR OF ANY OPEN TAXIWAY OBJECT FREE AREA. (TOFA)

NOTES
1: CONSTRUCT NEW TAXIWAY PRIOR TO REMOVAL OF OLD TAXIWAY.
2: LIGHTED "X"s NOT REQUIRED.

CONSTRUCTION SAFETY AND PHASING PLAN - ADDITIVE 1 - TAXIWAY

REVISIONS

NO.	DATE	APPROVED BY

CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1, P.O. Box 1758, Vernal, Utah 84078
Telephone: (435) 789-5448 Fax: (435) 789-4485

DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED: PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT APRON CONSTRUCTION
CONSTRUCTION SAFETY PLAN - TAXIWAY

SHEET NO. A1_CS-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A1_CS-01 DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/27/2023

SHEET NO.
A2_1

U.S. Standard Units
(Inch-Pound Units)

ALL UNITS IN FEET UNLESS OTHERWISE NOTED

DUTCH JOHN AIRPORT
APRON CONSTRUCTION PROJECT
ADDITIVE 2 - ADDITIONAL APRON

INDEX TO SHEETS - ADDITIVE 2 - ADDITIONAL APRON

SHEET NUMBER	NUMBER OF SHEETS	DESCRIPTION
A2_1	1	TITLE - ADDITIONAL APRON
A2_SM-01 to A2_SM-02	2	SUMMARY - ADDITIONAL APRON
A2_PL-01	1	PLAN - ADDITIONAL APRON
A2_GR-01	1	GRADE - ADDITIONAL APRON
A2_SS-01	1	STRIPING - ADDITIONAL APRON

SUMMARY OF ITEMS - ADDITIVE 2 - ADDITIONAL APRON

#	PAY ITEM NUMBER	PAY ITEM NAME	UNIT	QUANTITY	SHEET NUMBER
1	C-105	MOBILIZATION	LUMP	1	A2_SM-01
2	152-4.2	EXCAVATION (PLAN QUANTITY)	CU YD	8	A2_SM-02
3	152-4.3	BORROW (PLAN QUANTITY)	CU YD	145	A2_SM-02
4	154-5.1	SUBBASE COURSE (PLAN QUANTITY)	CU YD	172	A2_SM-02
5	160-5.1	TIEDOWN	EACH	1	A2_SM-02
6	209-5.1	CRUSHED AGGREGATE BASE COURSE (PLAN QUANTITY)	CU YD	172	A2_SM-02
7	401-8.1	HMA - 1/2 INCH	TON	176	A2_SM-02
8	602-5.1	EMULSIFIED ASPHALT PRIME COAT	TON	1	A2_SM-02
9	620-5.1	RUNWAY AND TAXIWAY MARKING PAINT	GALLON	1	A2_SM-01
10	620-5.2	TEMPORARY RUNWAY AND TAXIWAY MARKING PAINT	GALLON	1	A2_SM-01
11	901-5.1	SEEDING	1000 SQ FT	1	A2_SM-02
12	905-5.1	STRIP, STOCKPILE AND SPREAD TOPSOIL (PLAN QUANTITY)	CU YD	172	A2_SM-02
13	908-6.1	HECP TYPE I	1000 SQ FT	1	A2_SM-02

RUNWAY AND TAXIWAY MARKING - ADDITIVE 2 - ADDITIONAL APRON

	FROM		TO		6" YELLOW 230 FT/GAL SOLID		RUNWAY AND TAXIWAY MARKING PAINT	REMARKS
	STATION	OFFSET	STATION	OFFSET	FEET	GALLON	GALLON	
DUTCH JOHN AIRPORT	9+80.48	0.00 RT	10+49.48	0.00 RT	69.0	0.30	0.30	
DUTCH JOHN AIRPORT	10+00.23	73.50 LT	10+29.73	73.50 LT	29.5	0.13	0.13	TD-8
DUTCH JOHN AIRPORT	10+14.98	73.50 LT	10+14.98	97.00 LT	23.5	0.10	0.10	TD-8
RUNWAY AND TAXIWAY MARKING PAINT TOTAL					***122.00**	***0.53**	**1**	
TEMPORARY RUNWAY AND TAXIWAY MARKING PAINT TOTAL					***122.00**	***0.27**	**1**	

* FOR CONTRACTOR INFORMATION ONLY

REVISIONS

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DRAWN BY KHG
QC CHECKED BY BAR

APPROVED: 1/12/2023 DATE
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT APRON CONSTRUCTION
SUMMARY OF ITEMS, RUNWAY AND TAXIWAY MARKING - ADDITIONAL APRON

SHEET NO. A2_SM-01

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A2_SM-01 SUMMARY OF ITEMS - DUTCH JOHN AIRPORT EXPANSION civco.ctb 1/27/2023

EARTHWORK SUMMARY - ADDITIVE 2 - ADDITIONAL APRON

LINE	STATION				LENGTH	EXCAVATION (PLAN QUANTITY)	EXCAVATION X 0.87	EMBANKMENT	BORROW (PLAN QUANTITY)	REMARKS
	FROM	OFFSET	TO	OFFSET	FEET	CU YD	CU YD	CU YD	CU YD	
DUTCH JOHN AIRPORT	9+80.48		10+49.48		69	8	7	152	145	
TOTAL						8	*7	*152	145	

SURFACING SUMMARY - ADDITIVE 2 - ADDITIONAL APRON

LINE	STATION				LENGTH	BASE COURSES								HOT MIX ASPHALT				EMULSIFIED ASPHALT PRIME COAT 0.20 GAL/YD²	REMARKS
						SUBBASE COURSE (PLAN QUANTITY)				CRUSHED AGGREGATE BASE COURSE (PLAN QUANTITY)				HMA - 1/2 INCH (PG 64-34) (152 LB/FT³)				(240 GAL/TON)	
	FROM	OFFSET	TO	OFFSET	FEET	AVG WIDTH FEET	DEPTH IN	VOL FT³	VOL YD³	AVG WIDTH FEET	DEPTH IN	VOL FT³	VOL YD³	AVG WIDTH FEET	DEPTH IN	VOL FT³	TON	TON	
DUTCH JOHN AIRPORT	9+80.48		10+49.48		69	134.5	6	4,640	172	134.5	6	4,640	172	134.5	3	2,320	176	0.9	
TOTAL									172				172				176	1	

TIE DOWN SUMMARY - ADDITIVE 2 - ADDITIONAL APRON

LINE	STATION		TIE DOWN	REMARKS
	STATION	OFFSET	EACH	
DUTCH JOHN AIRPORT	10+14.98	73.50 LT	1	TD-8
TOTAL			1	

LANDSCAPING SUMMARY - ADDITIVE 2 - ADDITIONAL APRON

LINE	FROM	TO	STRIP, STOCKPILE, AND SPREAD TOPSOIL (PLAN QUANTITY)*	SEEDING	HECP TYPE I	REMARKS
	STATION	STATION	CU YD	1000 SQ FT	1000 SQ FT	
DUTCH JOHN AIRPORT	9+80.48	10+49.48	172	1	1	
TOTAL			172	1	1	

* ASSUMES 6" DEEP

REVISIONS

NO.	DATE	APPROVED BY

DRAWN BY KHG
QC CHECKED BY BAR
1/12/2023 DATE

CIVCO Engineering, Inc.
1256 W. 400 S. STE. 1 P.O. Box 1758, Vernal, Utah 84078
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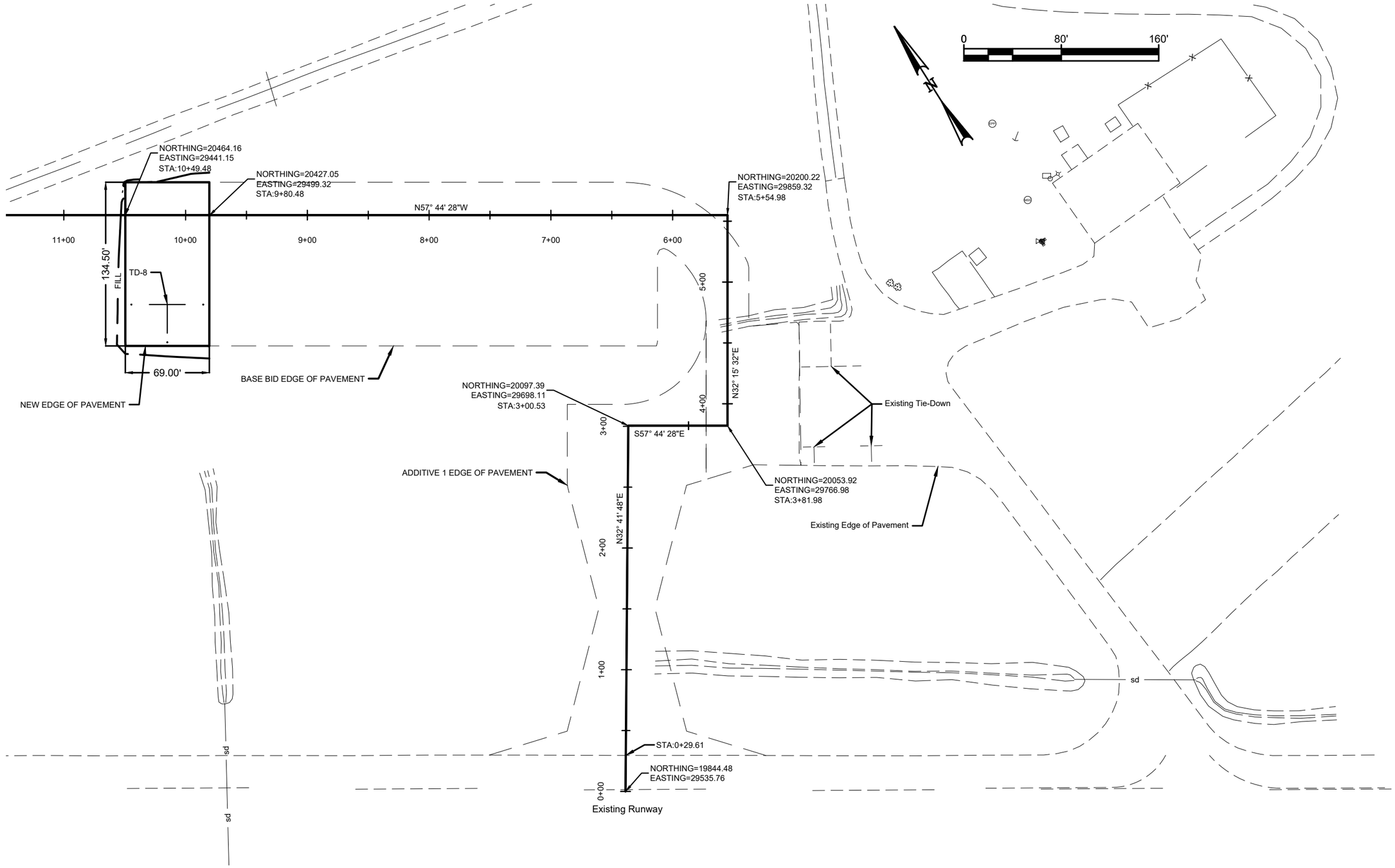
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT APRON CONSTRUCTION
QUANTITIES SUMMARY - ADDITIONAL APRON

SHEET NO. A2_SM-02

S:\1_PROJECTS\2022\04_DAGGETT COUNTY\DUTCH JOHN AIRPORT EXPANSION DESIGN\SHEET FILES\A2_SM-02 EARTHWORK & SURFACING SUMMARY - ADDITIVE 2 - ADDITIONAL APRON.dwg civco.ctb 1/25/2023



TIE-DOWN REQ'D
[TD-8] 10+14.98 73.50 LT

NOTE: SEE DT-01

REVISIONS

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DRAWN BY: KHG
QC CHECKED BY: BAR
DATE: 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
PLAN - ADDITIONAL APRON

SHEET NO. A2_PL-01

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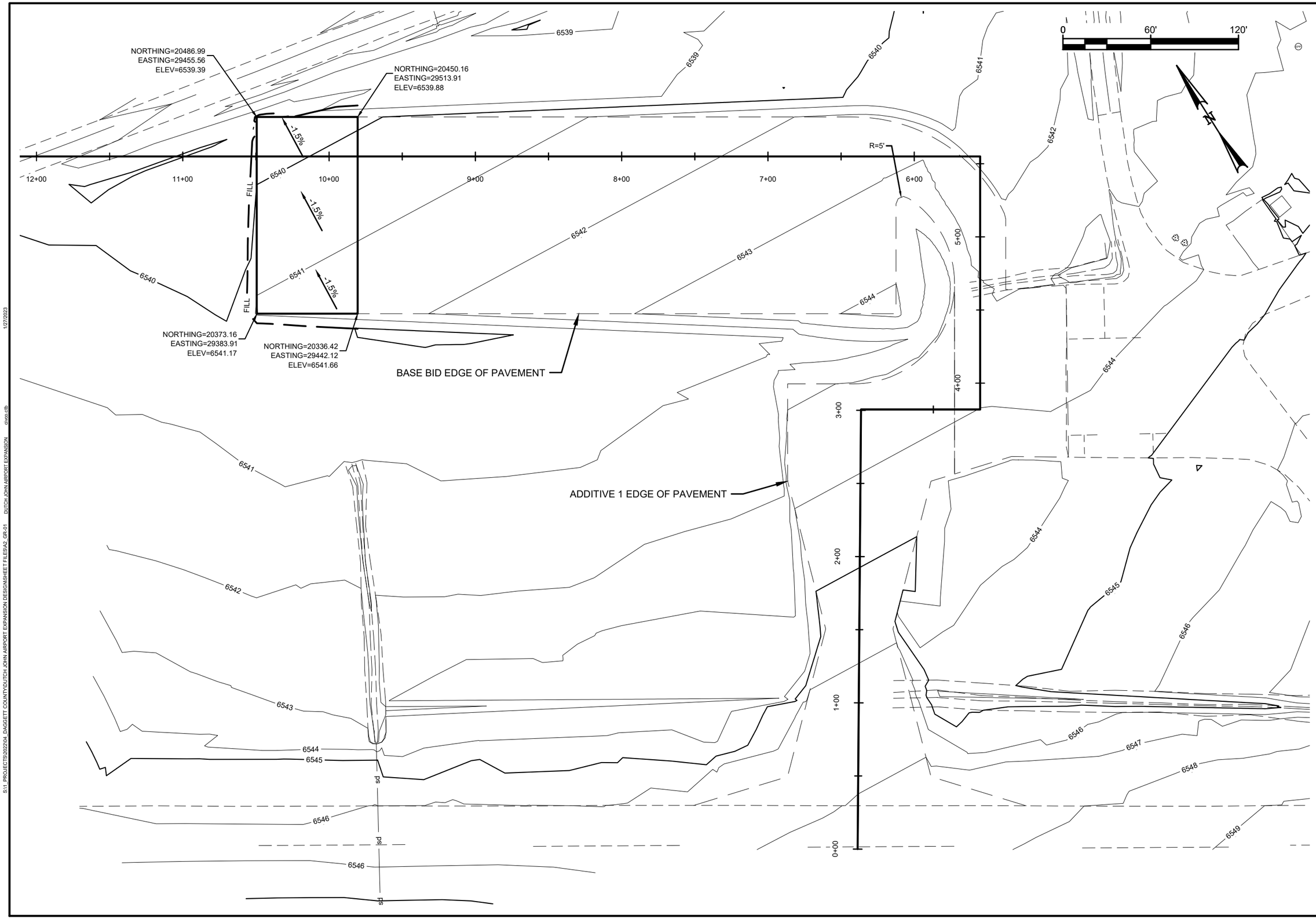

REVISIONS

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DRAWN BY KHG
QC CHECKED BY BAR

1/12/2023
DATE

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APPROVED:

PROFESSIONAL ENGINEER

OWNER: DAGGETT COUNTY

PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION

GRADE - ADDITIONAL APRON

SHEET NO. A2_GR-01

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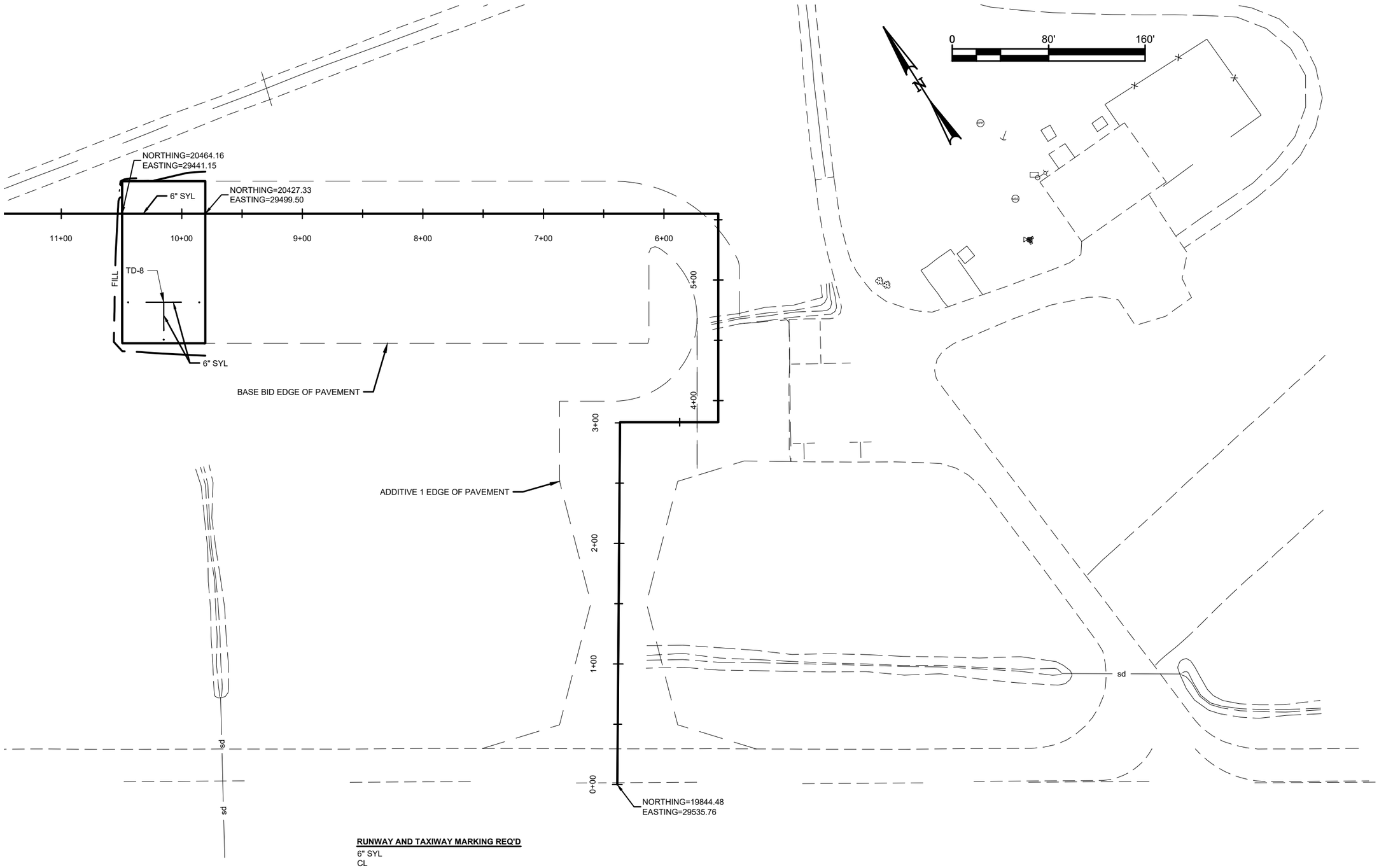

RUNWAY AND TAXIWAY MARKING REQ'D
6" SYL
CL
9+80.48 0.00 TO
10+49.48 0.00

TIE DOWN MARKINGS
10+00.23 73.50 LT TO
10+29.73 73.50 LT
10+14.98 73.50 LT TO
10+14.98 97.00 LT

STRIPING KEY
SYL = SINGLE YELLOW LINE

NOTE: SEE DT-01

REVISIONS

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DATE 1/12/2023
APPROVED:
PROFESSIONAL ENGINEER

OWNER DAGGETT COUNTY
PROJECT NAME: DUTCH JOHN AIRPORT
APRON CONSTRUCTION
STRIPING - ADDITIONAL APRON

SHEET NO. A2_SS-01

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