



## T.O ENGINEERS

October 9, 2017

Katie Hollingshead  
Permit Representative  
City of Lewiston  
215 'D' Street  
Lewiston, ID 83501-1930

**RE: Response to Review Comments**  
**Lewiston Airport – Airport Operations Building**  
**Permit #U17-000020**

Dear Katie:

Thank you for the City review comments for the Civil portion of the subject project, received on July 31, 2017. Our response follows:

**Engineering Plan Review Comments:**

E1: Crushed aggregate backfill required for bedding pipe and trench zone backfill on all public underground utilities. Any variation requires approval from the City Engineer prior to construction.

Response: Agreed. Class 'D' crushed aggregate backfill will be used. See Key Note 1 on Plan Sheet C4.0.

E2: Asphalt pavement as proposed, does not require ROW Encroachment permit for placement above public utilities. Concrete apron would require ROW Encroachment permit for placement above public utilities.

Response: The 1-ft +/- encroachment of the concrete apron was discussed with Mike Smith (RLB Architecture) and Pat Severance (City of Lewiston) on 8/1/17, and no concerns were expressed.

E3: Provide legal description for easement after fire hydrant installation.

Response: Will do. Scheduled for late fall 2017.

E4: Put City of Lewiston Inspection Checklist in Civil Plan Set.

Response: Included as an addition to Plan Sheet C2.0 via Addendum No. 3 dated 8/4/1017.

E5: Sheet C4 - All Connections to live main will be hot taps. Note 8 - Contractor to perform final tie in.

Response: Agreed. See Note 8, Plan Sheet C4.0.

E6: Detention ponds need to drain in 72 hours. Recommend infiltration test to determine infiltration rate.

Response: Taken under advisement. Infiltration tests have not been accomplished at this time.



## T.O ENGINEERS

### Wastewater Plan Review Comments

- WW1:** All floor drains subject to backflow or backpressure shall be equipped with an approved backwater valve installed in the drains at the property owner's expense. (Refer to City Code, Chapter 36, Art. III. Wastewaters, Division I, Sec. 36-43 (b).)
- Response:** The proposed concrete floor slab elevation is set at 1442.00'. The adjacent wastewater manholes lids are more than one (1) foot below the floor slab/drain elevations as proposed. Please refer to Civil Sheet C4.0 for SSMH-4 and SSMH-5 rim elevations.
- WW2:** A separate and independent building wastewater line shall be provided for each building for connection with the Public wastewater system, except townhouses or condominium developments, which may connect to the main line with a single 6" service line. No service lines shall connect into manholes. Manholes shall not have rungs or inside drops. Sewer mains shall be televised and air tested before acceptance.
- Response:** One 6-inch wastewater line is proposed for the building, connecting to an existing 8-inch City sewer main. No new manholes or sewer mains are proposed. See Plan Sheet C4.0.
- WW3:** No person shall construct, extend, relay, repair or connect a building wastewater line without first obtaining a Permit. Each connection to the City Wastewater System shall be a minimum of a 4" line and shall be inspected and approved by a City inspector.
- Response:** Added to the Contract Documents via Addendum 3. See Spec Section 33 33 00 Sanitary Sewers.
- WW4:** No structure shall be constructed on any Public wastewater easement. Wastewater easements shall be constructed and maintained so as to allow permanent access for maintenance equipment to maintain wastewater lines located in said easement (twenty (20) feet required).
- Response:** Existing water and wastewater lines are located inside the airfield security fence. Easements are shown on the Civil Plans. Access to these lines requires access inside the airfield security fence, currently via a gate at the SE corner of the project site. This gate will be removed and replaced with a new gate 320 feet to the north. Access to SSMH-4 will be improved (will be accessible from outside the fence). Access to SSMH-5 will be via the new gate at the NE corner of the building.
- WW5:** Storm water, including roof runoff is prohibited from discharge to the City Sanitary system unless specifically authorized in writing by the Water Wastewater Systems Manager.
- Response:** Agreed. No such connections are proposed.
- WW6:** IDAPA and State codes must be followed.
- Response:** Agreed.
- WW7:** The City does not own, operate, or maintain sewer laterals including pressure sewer laterals.
- Response:** Agreed.
- WW8:** During Demolition wastewater lines need capped at the property line.
- Response:** Not applicable / no demolition proposed.



## T.O ENGINEERS

WW9: Pressure Sewer Laterals on Record Drawings must be explicitly notated as "Pressure Sewer Laterals and Associated Pumping Equipment: Privately owned, operated, and maintained".

Response: Not applicable / no pressure laterals are proposed.

WW10: Pressure Sewer Laterals connected to a gravity main fall under the Idaho Department of Building

Safety requirements.

Response: Not applicable / no pressure laterals are proposed.

### Fire Department Review Comments

FD1: Approval does not include the intended private fire service line. Separate plans and permit are required for said service, indicating compliance with NFPA 24 and Lewiston Fire Department standards.

Response: Fire line requirements were removed from the Civil Plans and Specs via Addendum 3. See Specification Division 21, for Fire Lines.

### Pretreatment Comments

None noted.

### Cross Connection Comments

CC1: A reduced pressure backflow assembly (RPBA) will be required on the domestic water service between the city water meter and any branches or fixtures on the service line (including irrigation). If the RPBA is located inside the building, adequate drainage should be provided. A 2" RPBA is capable of discharging up to 250 gallons per minute through the relief valve. Outdoor installation of the RPBA, inside a freeze enclosure, will eliminate potential flood damage within the building. See document "RPBA Discharge Rates.pdf"

Response: See Plan Sheet P2.0 and Detail 2 / Plan Sheet PD2.0, submitted under separate cover.

### Public Works Comments

PW1: EBIS will need paid for any new or additional service; for quote send water meter size/sizes to JTOLMAN@CITYOF LEWISTON.ORG

Response: The proposed water meter size is 2-inch, per Plan Sheet C4.0. Fee amounts were reviewed and confirmed by Jill Tolman on 7/28/2017.

The following documents are enclosed for your review and approval:

#### Plan Sheets

Sheet C1.0, Site Survey	Rev 1 stamped 7/13/17
Sheet C2.0, Civil Site Plan	Rev 3 dated 8/4/17, stamped 10/9/17
Sheet C3.0, Construction Safety and Phasing	Rev 1 stamped 7/13/17
Sheet C4.0, Site Utility Plan	Rev 2 dated 8/4/17, stamped 10/9/17
Sheet C5.0, Grading and Drainage Plan	Rev 2 stamped 7/13/17
Sheet C6.0, Paving Plan	Rev 1 stamped 7/13/17
Sheet C7.0, Hillside Removal Bid Alternate #3	Rev 2 stamped 8/2/17
Sheet C8.0, Paving, Grading, and Drainage Details	Rev 1 stamped 7/13/17
Sheet C9.0, Fencing and Gate Layout	Rev 1 stamped 7/13/17
Sheet C10.0, Fencing, Gate, and Striping Details	Rev 1 stamped 7/13/17



## T-O ENGINEERS

### Specifications

Spec Section 33 11 00, Water Distribution

Revised per Addendum 3 dated 8/4/17

Spec Section 33 33 00, Sanitary Sewers

Revised per Addendum 3 dated 8/4/17

Note: No changes are proposed to the Stormwater Management Plan, originally submitted on June 30, 2017.

We look forward to any additional review comments you may have. If you have any questions, please call me at (509) 319-2580.

Sincerely,

T-O ENGINEERS, INC.

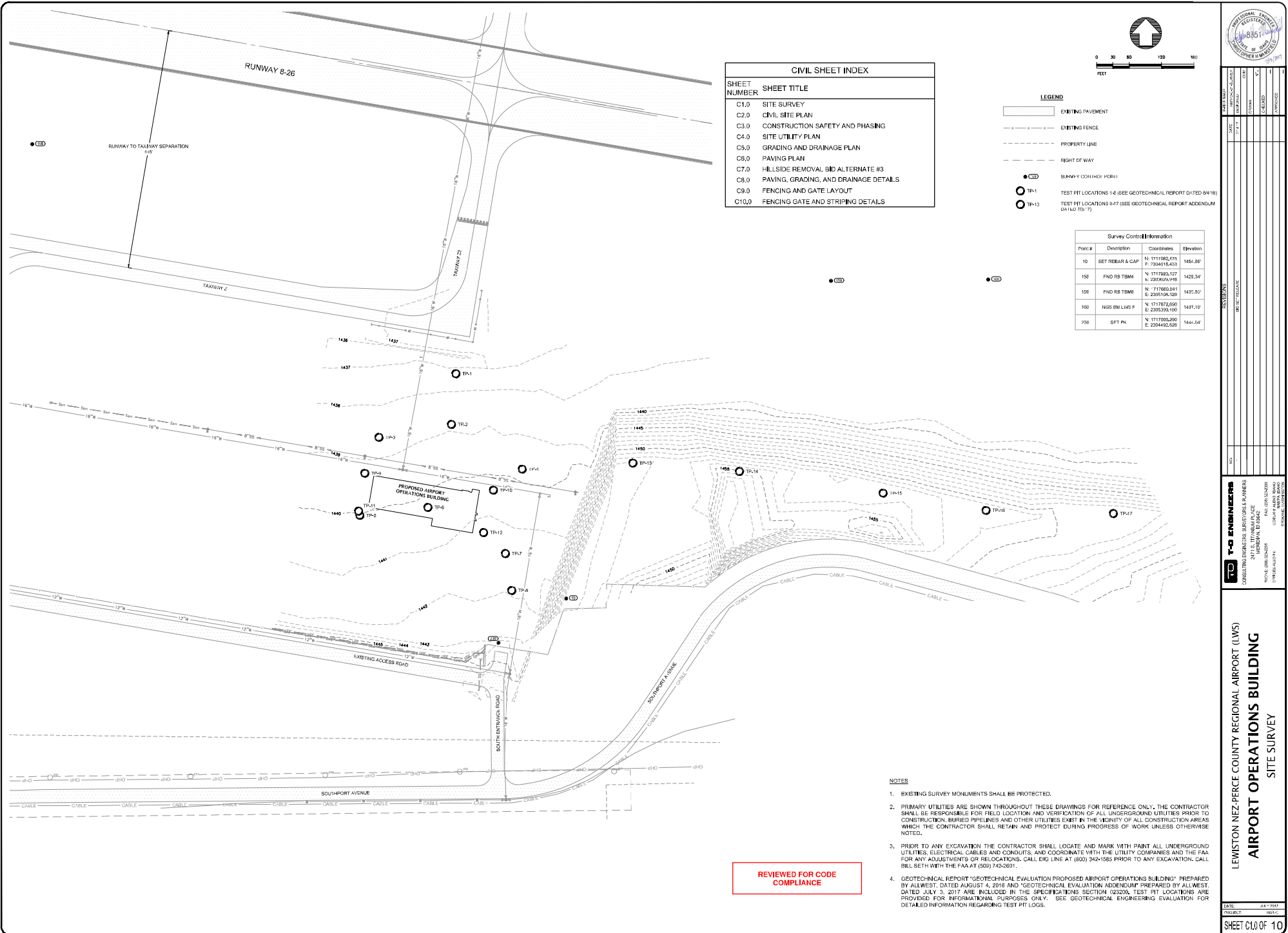
Chris Mansfield, P.E.  
Project Civil Engineer

Enclosures

cc: Stephanie Morgan, Lewiston-Nez Perce County Regional Airport  
Mike Smith, RLB



© 2017 T-O ENGINEERS. THIS INSTRUMENT IS THE PROPERTY OF T-O ENGINEERS. ANY REPRODUCTION, REUSE OR MODIFICATION OF THIS INSTRUMENT OR ITS CONTENTS WITHOUT SPECIFIC WRITTEN PERMISSION OF T-O ENGINEERS IS STRICTLY PROHIBITED.

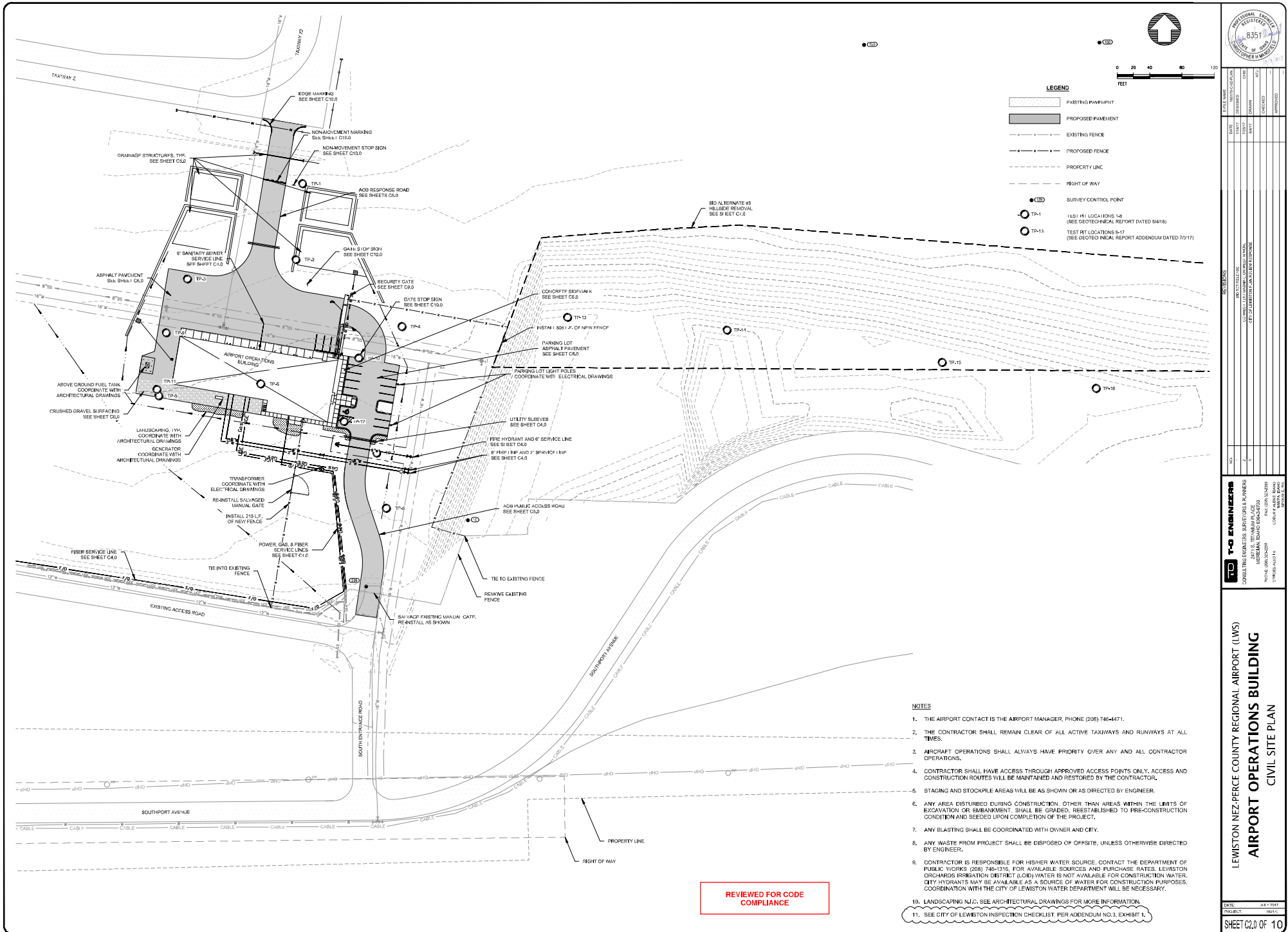


REVIEWED FOR CODE COMPLIANCE

LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
**AIRPORT OPERATIONS BUILDING**  
SITE SURVEY

DATE: 08/17/2017  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
SHEET C1.0 OF 10

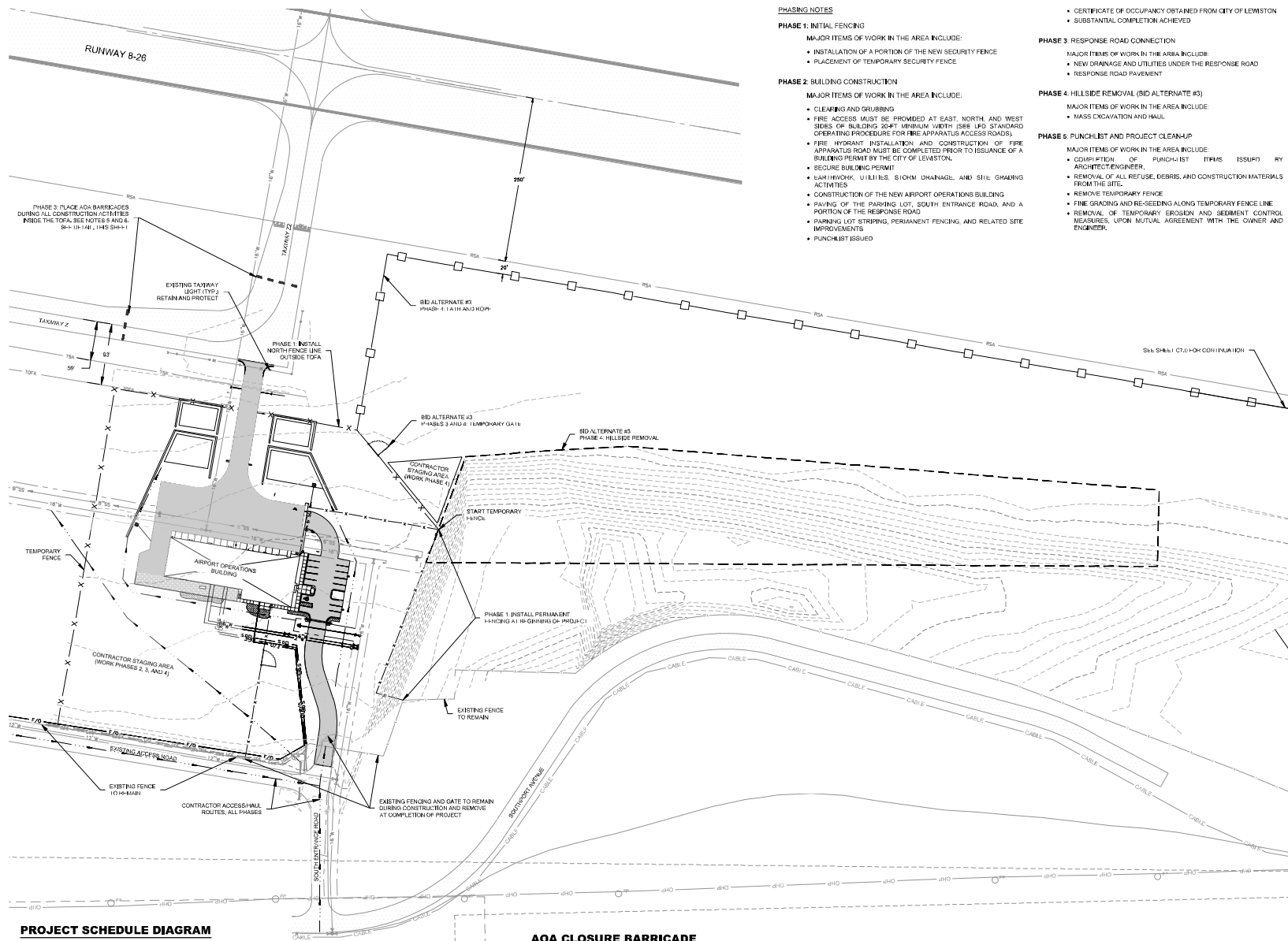
© 2017 T-O ENGINEERS. THIS INSTRUMENT IS THE PROPERTY OF T-O ENGINEERS. ANY REPRODUCTION, REUSE OR MODIFICATION OF THIS INSTRUMENT WITHOUT SPECIFIC WRITTEN PERMISSION OF T-O ENGINEERS IS STRICTLY PROHIBITED.



LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
**AIRPORT OPERATIONS BUILDING**  
CIVIL SITE PLAN

DATE	DESCRIPTION	BY	CHKD
10/1/2017	REVISION 1	1	1
10/1/2017	REVISION 2	1	1
10/1/2017	REVISION 3	1	1
10/1/2017	REVISION 4	1	1
10/1/2017	REVISION 5	1	1
10/1/2017	REVISION 6	1	1
10/1/2017	REVISION 7	1	1
10/1/2017	REVISION 8	1	1
10/1/2017	REVISION 9	1	1
10/1/2017	REVISION 10	1	1
10/1/2017	REVISION 11	1	1
10/1/2017	REVISION 12	1	1
10/1/2017	REVISION 13	1	1
10/1/2017	REVISION 14	1	1
10/1/2017	REVISION 15	1	1
10/1/2017	REVISION 16	1	1
10/1/2017	REVISION 17	1	1
10/1/2017	REVISION 18	1	1
10/1/2017	REVISION 19	1	1
10/1/2017	REVISION 20	1	1
10/1/2017	REVISION 21	1	1
10/1/2017	REVISION 22	1	1
10/1/2017	REVISION 23	1	1
10/1/2017	REVISION 24	1	1
10/1/2017	REVISION 25	1	1
10/1/2017	REVISION 26	1	1
10/1/2017	REVISION 27	1	1
10/1/2017	REVISION 28	1	1
10/1/2017	REVISION 29	1	1
10/1/2017	REVISION 30	1	1
10/1/2017	REVISION 31	1	1
10/1/2017	REVISION 32	1	1
10/1/2017	REVISION 33	1	1
10/1/2017	REVISION 34	1	1
10/1/2017	REVISION 35	1	1
10/1/2017	REVISION 36	1	1
10/1/2017	REVISION 37	1	1
10/1/2017	REVISION 38	1	1
10/1/2017	REVISION 39	1	1
10/1/2017	REVISION 40	1	1
10/1/2017	REVISION 41	1	1
10/1/2017	REVISION 42	1	1
10/1/2017	REVISION 43	1	1
10/1/2017	REVISION 44	1	1
10/1/2017	REVISION 45	1	1
10/1/2017	REVISION 46	1	1
10/1/2017	REVISION 47	1	1
10/1/2017	REVISION 48	1	1
10/1/2017	REVISION 49	1	1
10/1/2017	REVISION 50	1	1
10/1/2017	REVISION 51	1	1
10/1/2017	REVISION 52	1	1
10/1/2017	REVISION 53	1	1
10/1/2017	REVISION 54	1	1
10/1/2017	REVISION 55	1	1
10/1/2017	REVISION 56	1	1
10/1/2017	REVISION 57	1	1
10/1/2017	REVISION 58	1	1
10/1/2017	REVISION 59	1	1
10/1/2017	REVISION 60	1	1
10/1/2017	REVISION 61	1	1
10/1/2017	REVISION 62	1	1
10/1/2017	REVISION 63	1	1
10/1/2017	REVISION 64	1	1
10/1/2017	REVISION 65	1	1
10/1/2017	REVISION 66	1	1
10/1/2017	REVISION 67	1	1
10/1/2017	REVISION 68	1	1
10/1/2017	REVISION 69	1	1
10/1/2017	REVISION 70	1	1
10/1/2017	REVISION 71	1	1
10/1/2017	REVISION 72	1	1
10/1/2017	REVISION 73	1	1
10/1/2017	REVISION 74	1	1
10/1/2017	REVISION 75	1	1
10/1/2017	REVISION 76	1	1
10/1/2017	REVISION 77	1	1
10/1/2017	REVISION 78	1	1
10/1/2017	REVISION 79	1	1
10/1/2017	REVISION 80	1	1
10/1/2017	REVISION 81	1	1
10/1/2017	REVISION 82	1	1
10/1/2017	REVISION 83	1	1
10/1/2017	REVISION 84	1	1
10/1/2017	REVISION 85	1	1
10/1/2017	REVISION 86	1	1
10/1/2017	REVISION 87	1	1
10/1/2017	REVISION 88	1	1
10/1/2017	REVISION 89	1	1
10/1/2017	REVISION 90	1	1
10/1/2017	REVISION 91	1	1
10/1/2017	REVISION 92	1	1
10/1/2017	REVISION 93	1	1
10/1/2017	REVISION 94	1	1
10/1/2017	REVISION 95	1	1
10/1/2017	REVISION 96	1	1
10/1/2017	REVISION 97	1	1
10/1/2017	REVISION 98	1	1
10/1/2017	REVISION 99	1	1
10/1/2017	REVISION 100	1	1

© 2017 T-O ENGINEERS. THIS INSTRUMENT IS THE PROPERTY OF T-O ENGINEERS. ANY REPRODUCTION, REUSE OR MODIFICATION OF THIS INSTRUMENT WITHOUT SPECIFIC WRITTEN PERMISSION OF T-O ENGINEERS IS STRICTLY PROHIBITED.

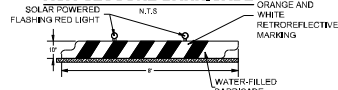


PROJECT SCHEDULE DIAGRAM



- NOTES:
- WORKING HOURS ARE AS FOLLOWS: MONDAY - FRIDAY 7:00AM - 5:00PM. ADDITIONAL WORK HOURS ARE AVAILABLE AS APPROVED BY THE AIRPORT.
  - ALL DAYS IN THE PROJECT SCHEDULE ARE CALENDAR DAYS.

AOA CLOSURE BARRICADE



- BARRICADES SHALL MEET REQUIREMENTS OF SPECIFICATION SECTION 01 35 23.
- THE CONTRACTOR SHALL SUPPLY AOA BARRICADES. THE CONTRACTOR IS RESPONSIBLE FOR ALL BATTERIES, BULBS, REPLACEMENT LIGHTS, PARTS AND MAINTENANCE OF BARRICADES AND LIGHTS AS REQUIRED THROUGHOUT THE PROJECT. CONTRACTOR SHALL ENSURE PROPER OPERATION OF BARRICADES AND FLASHING LIGHTS AT ALL TIMES.
- MAXIMUM GAP SPACING BETWEEN BARRICADES IS 4'. BARRICADE LIGHT SPACING IS 10' MAX.

PHASING NOTES

PHASE 1: INITIAL FENCING

MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

- INSTALLATION OF A PORTION OF THE NEW SECURITY FENCE
- PLACEMENT OF TEMPORARY SECURITY FENCE

PHASE 2: BUILDING CONSTRUCTION

MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

- CLEARING AND GRUBBING
- FIRE ACCESS MUST BE PROVIDED AT EAST, NORTH, AND WEST SIDES OF BUILDING (24" MINIMUM WIDTH (SEE LPO STANDARD OPERATING PROCEDURE FOR FIRE APPARATUS ACCESS ROADS))
- FIRE HYDRANT INSTALLATION AND CONSTRUCTION OF FIRE APPARATUS ROAD MUST BE COMPLETED PRIOR TO ISSUANCE OF A BUILDING PERMIT BY THE CITY OF LEWISTON
- SECURE BUILDING PERMIT
- LANDWORK, UTILITIES, SLOPE DRAINAGE, AND SITE GRADING ACTIVITIES
- CONSTRUCTION OF THE NEW AIRPORT OPERATIONS BUILDING
- PAVING OF THE PARKING LOT, SOUTH ENTRANCE ROAD, AND A PORTION OF THE RESPONSE ROAD
- PARKING LOT STRIPING, PERMANENT FENCING, AND RELATED SITE IMPROVEMENTS
- PUNCHLIST ISSUED

- CERTIFICATE OF OCCUPANCY OBTAINED FROM CITY OF LEWISTON
- SUBSTANTIAL COMPLETION ACHIEVED

PHASE 3: RESPONSE ROAD CONNECTION

MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

- NEW DRAINAGE AND UTILITIES UNDER THE RESPONSE ROAD
- RESPONSE ROAD PAVEMENT

PHASE 4: HILLSIDE REMOVAL (BID ALTERNATE #3)

MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

- MASS EXCAVATION AND HAUL

PHASE 5: PUNCHLIST AND PROJECT CLEANUP

MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

- COMPLETION OF PUNCHLIST ITEMS (ISSUED BY ARCHITECT/ENGINEER)
- REMOVAL OF ALL REFUSE, DEBRIS, AND CONSTRUCTION MATERIALS FROM THE SITE
- REMOVE TEMPORARY FENCE
- FINE GRADING AND RE-SEEDING ALONG TEMPORARY FENCE LINE
- REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, UPON MUTUAL AGREEMENT WITH THE OWNER AND ENGINEER



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING FENCE
- PROPOSED FENCE
- TEMPORARY FENCE
- CONTRACTOR HAUL ROUTE

NOTES

- THIS PLAN IDENTIFIES THE ENTIRE PROJECT AREA. SEE CONSTRUCTION SAFETY AND PHASING PLAN AND SPECIFICATION SECTION 01 35 13 FOR DETAILED PHASING INFORMATION. CONSTRUCTION SAFETY PLAN SHEETS ARE NOT INTENDED TO SHOW OR DEFINE DETAILED CONSTRUCTION REQUIREMENTS. FINAL PHASING SHALL BE ESTABLISHED AT THE PRE-CONSTRUCTION MEETING.
- CONTRACTOR SHALL SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) TO THE AIRPORT OPERATIONS FOR REVIEW AND APPROVAL PRIOR TO ISSUANCE OF NOTICE TO PROCEED. SEE SPECIFICATION SECTION 01 35 23 FOR DETAILS.
- THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIRPORT SECURITY AND AROUND THE PROJECT FOR THE DURATION OF THE PROJECT. ALL CONTRACTOR ACTIVITIES ON THE AIRPORT DURING CONSTRUCTION SHALL COMPLY WITH THE CURRENT VERSION OF FAA ADVISORY CIRCULAR 150/5217, "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION". A COPY OF THIS ADVISORY CIRCULAR WILL BE MADE AVAILABLE TO THE CONTRACTOR AT OR BEFORE THE PRE-CONSTRUCTION CONFERENCE.
- TAXIWAY Z AND TAXIWAY 22 SHALL REMAIN OPEN AT ALL TIMES DURING THE PROJECT. EXCEPT WHEN WORK IS PERFORMED INSIDE THE TAXIWAY OBJECT FREE AREA (TOFA) DURING WORK PHASE 3, CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT, VEHICLES, PERSONNEL AND SUPPLIES ARE KEPT OUT OF TAXIWAYS Z AND 22 OBJECT FREE AREAS (TOFA) DURING WORK PHASES 1, 2, 4, AND 5.
- TAXIWAY Z AND TAXIWAY 22 CLOSURE: TAXIWAY 22 SHALL BE CLOSED FOR THE DURATION OF WORK PHASE 3. TAXIWAY Z SHALL BE CLOSED BETWEEN THE GENERAL AVIATION APRON AND TAXIWAY 22 FOR THE DURATION OF WORK PHASE 3. BARRICADE LOCATIONS NOTED ON THIS SHEET ARE FOR CLOSURES OF TAXIWAYS UNLESS OTHERWISE SPECIFIED. CONTRACTOR SHALL NOTIFY THE AIRPORT AND SAFETY OFFICER TO COORDINATE WORK INSIDE THE TAXIWAY Z AND 22 TOFA A MINIMUM OF 7 DAYS IN ADVANCE.
- ALL PERSONNEL AND EQUIPMENT SHALL BE CONFINED TO THE IMMEDIATE WORK AREA AT ALL TIMES.
- THE OWNER WILL DESIGNATE A PROJECT SAFETY OFFICER RESPONSIBLE FOR ISSUING MAINTAINING AND UPDATING NOTICES, WITH AUTHORITY IN MATTERS REGARDING AIRPORT OPERATIONS AND SAFETY. SEE SPECIFICATION SECTION 01 35 24.
- NO CONTRACTOR STAGING SHALL OCCUR ON THE AIRFIELD OUTSIDE OF THE NOTED AREAS WITHOUT APPROVAL FROM THE AIRPORT. ACCESS TO STAGING AREAS SHALL BE BY THE ROUTES SHOWN. THE CONTRACTOR SHALL PROVIDE ANY NECESSARY SIGNS AND DEVICES AT LOCATIONS WHERE CONSTRUCTION TRAFFIC ENTERS PUBLIC ROADS. ALL SUCH SIGNS AND DEVICES SHALL COMPLY WITH THE LATEST EDITION OF MUTCD.
- PROPOSED CHANGES TO STAGING AREA AND ACCESSIBLE ROUTES MAY REQUIRE ADDITIONAL REVIEW BY FAA. IF ADEQUATE TIME FOR REVIEW IS NOT PROVIDED, PROPOSED CHANGES WILL BE DENIED.

REVIEWED FOR CODE COMPLIANCE



DATE	REVISION	BY	CHKD
11/15/2017	1	TD	TD

T-O ENGINEERS  
CONSULTING ENGINEERS, SURVEYORS & LANDSCAPERS  
227 E. STANBURY PLACE  
LEWISTON, MAINE 04240  
PHONE: 603.686.1100  
FAX: 603.686.1101  
WWW.TOENGINEERS.COM

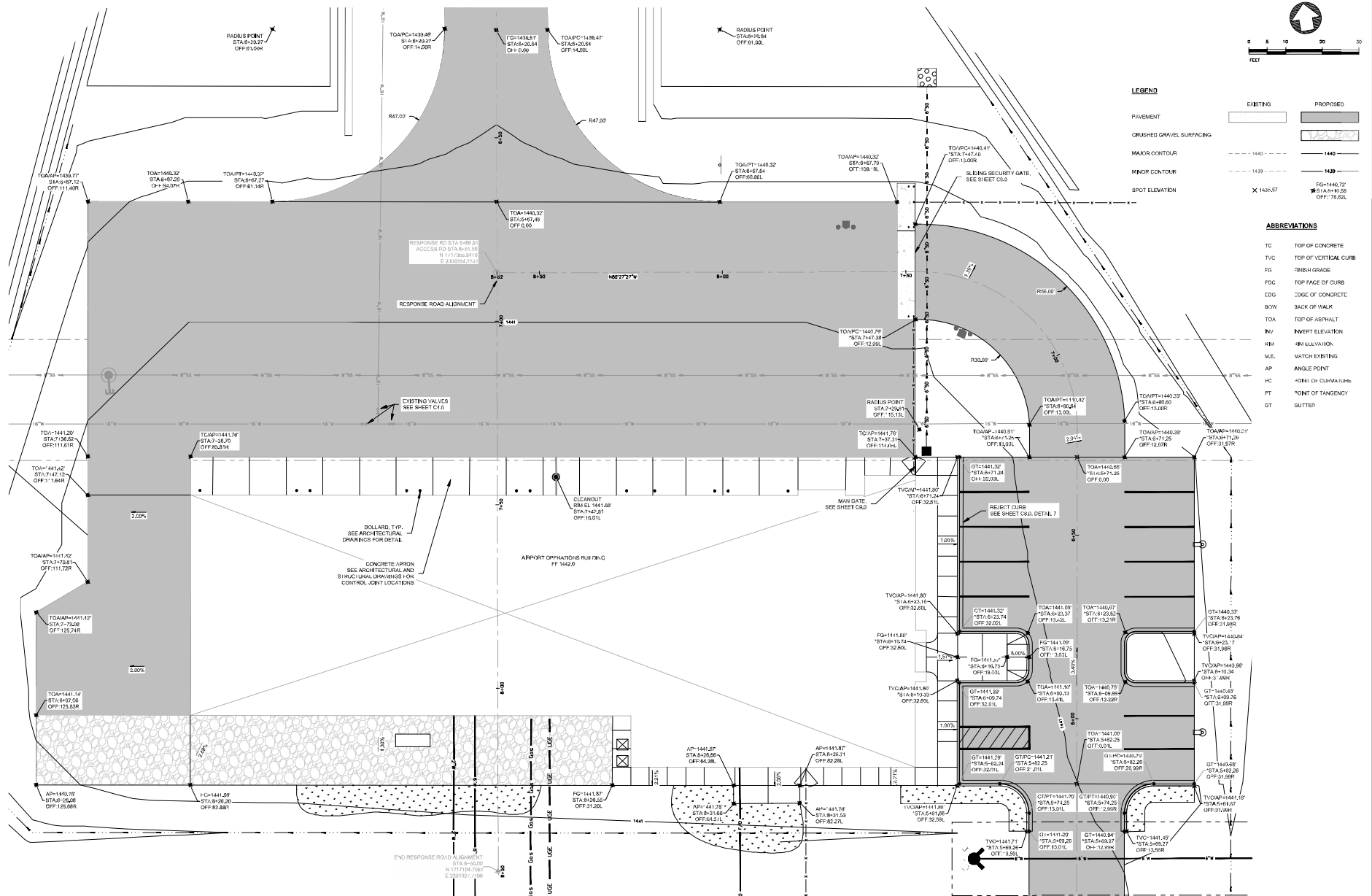
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
AIRPORT OPERATIONS BUILDING  
CONSTRUCTION SAFETY AND PHASING







© 2017 T-O ENGINEERS. THIS INSTRUMENT IS THE PROPERTY OF T-O ENGINEERS. ANY REPRODUCTION, REUSE OR MODIFICATION OF ITS CONTENTS WITHOUT SPECIFIC WRITTEN PERMISSION OF T-O ENGINEERS IS STRICTLY PROHIBITED.



PROJECT INFORMATION	
DATE	REVISION
10/1/2017	1.0
10/1/2017	2.0
10/1/2017	3.0
10/1/2017	4.0
10/1/2017	5.0
10/1/2017	6.0
10/1/2017	7.0
10/1/2017	8.0
10/1/2017	9.0
10/1/2017	10.0
10/1/2017	11.0
10/1/2017	12.0
10/1/2017	13.0
10/1/2017	14.0
10/1/2017	15.0
10/1/2017	16.0
10/1/2017	17.0
10/1/2017	18.0
10/1/2017	19.0
10/1/2017	20.0
10/1/2017	21.0
10/1/2017	22.0
10/1/2017	23.0
10/1/2017	24.0
10/1/2017	25.0
10/1/2017	26.0
10/1/2017	27.0
10/1/2017	28.0
10/1/2017	29.0
10/1/2017	30.0
10/1/2017	31.0
10/1/2017	32.0
10/1/2017	33.0
10/1/2017	34.0
10/1/2017	35.0
10/1/2017	36.0
10/1/2017	37.0
10/1/2017	38.0
10/1/2017	39.0
10/1/2017	40.0
10/1/2017	41.0
10/1/2017	42.0
10/1/2017	43.0
10/1/2017	44.0
10/1/2017	45.0
10/1/2017	46.0
10/1/2017	47.0
10/1/2017	48.0
10/1/2017	49.0
10/1/2017	50.0
10/1/2017	51.0
10/1/2017	52.0
10/1/2017	53.0
10/1/2017	54.0
10/1/2017	55.0
10/1/2017	56.0
10/1/2017	57.0
10/1/2017	58.0
10/1/2017	59.0
10/1/2017	60.0
10/1/2017	61.0
10/1/2017	62.0
10/1/2017	63.0
10/1/2017	64.0
10/1/2017	65.0
10/1/2017	66.0
10/1/2017	67.0
10/1/2017	68.0
10/1/2017	69.0
10/1/2017	70.0
10/1/2017	71.0
10/1/2017	72.0
10/1/2017	73.0
10/1/2017	74.0
10/1/2017	75.0
10/1/2017	76.0
10/1/2017	77.0
10/1/2017	78.0
10/1/2017	79.0
10/1/2017	80.0
10/1/2017	81.0
10/1/2017	82.0
10/1/2017	83.0
10/1/2017	84.0
10/1/2017	85.0
10/1/2017	86.0
10/1/2017	87.0
10/1/2017	88.0
10/1/2017	89.0
10/1/2017	90.0
10/1/2017	91.0
10/1/2017	92.0
10/1/2017	93.0
10/1/2017	94.0
10/1/2017	95.0
10/1/2017	96.0
10/1/2017	97.0
10/1/2017	98.0
10/1/2017	99.0
10/1/2017	100.0

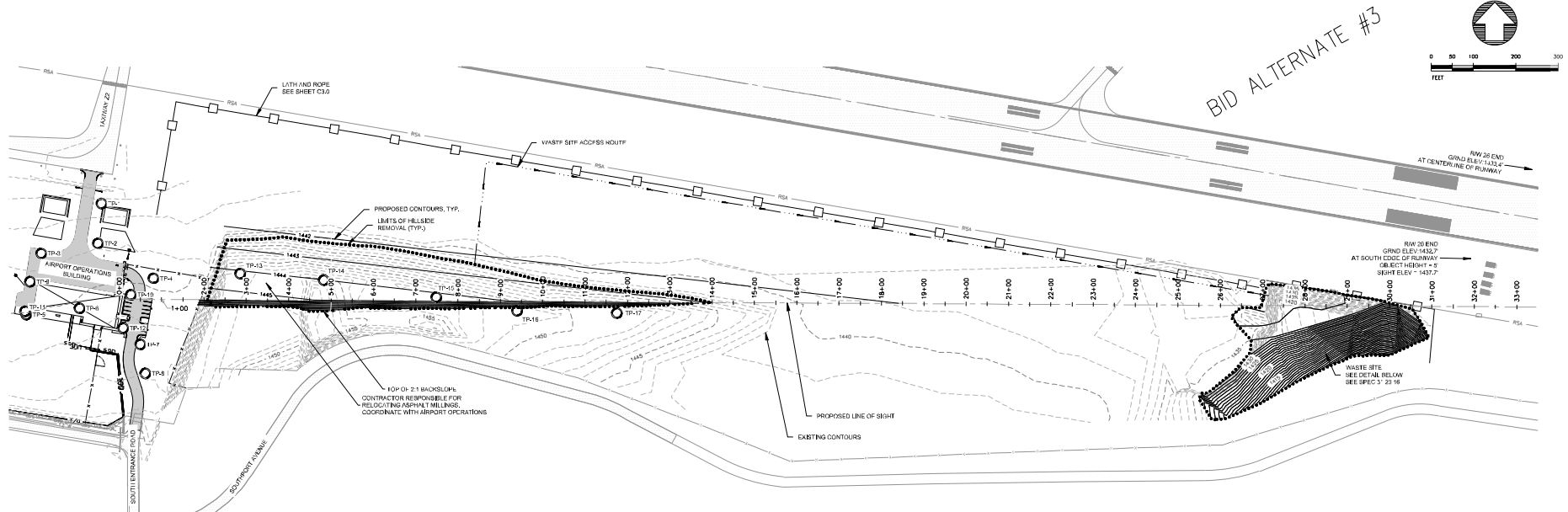
**PROJECT INFORMATION**

PROJECT: LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
SHEET: PAVING PLAN  
DATE: 10/1/2017  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
APPROVED BY: [Signature]

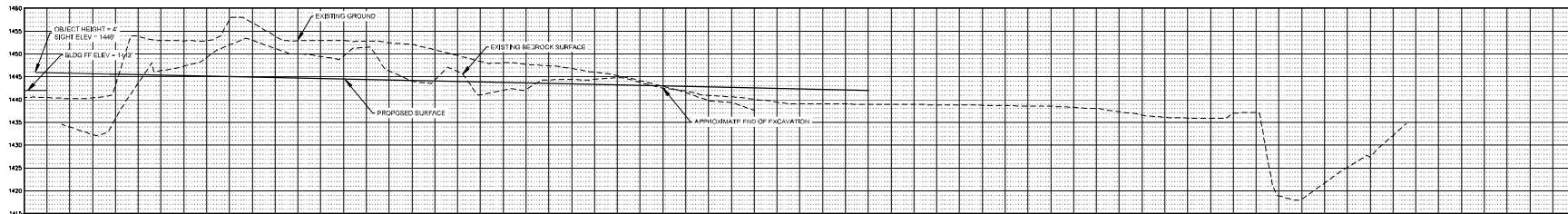
**REVIEWED FOR CODE COMPLIANCE**



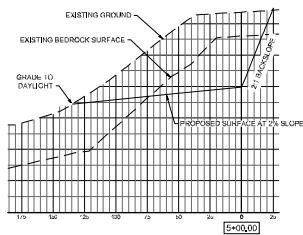
© 2017 T-O ENGINEERS. THIS INSTRUMENT IS THE PROPERTY OF T-O ENGINEERS. ANY REPRODUCTION, REUSE OR MODIFICATION OF THIS INSTRUMENT OR ITS CONTENTS WITHOUT SPECIFIC WRITTEN PERMISSION OF T-O ENGINEERS IS STRICTLY PROHIBITED.



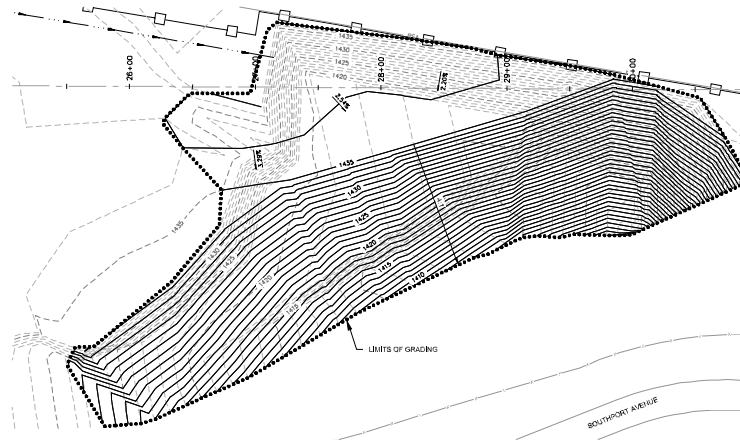
HILLSIDE REMOVAL PLAN



HILLSIDE REMOVAL PROFILE



TYPICAL CROSS SECTION - LOOKING EAST



WASTE SITE DETAIL

LEGEND

PAVEMENT	EXISTING	PROPOSED
MAJOR CONTOUR	--- 1460 ---	--- 1460 ---
MINOR CONTOUR	--- 1450 ---	--- 1450 ---
TEST PIT LOCATIONS 1-6 (SEE GEOTECHNICAL REPORT (DAI-D-BAY16))		○ TP-2
TEST PIT LOCATIONS 9-17 (SEE GEOTECHNICAL REPORT ADDENDUM DATED 7/3/17)		○ TP-17
FENCE	---	---

QUANTITIES

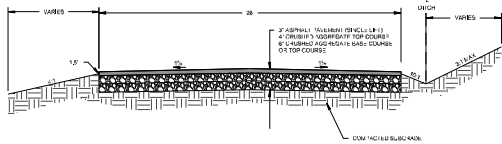
COMMON EXCAVATION	18,000 CY ±
ROCK EXCAVATION	6,000 CY ±
TOTAL	24,000 CY ±

NOTES

1. PRIMARY UTILITIES ARE SHOWN THROUGHOUT THESE DRAWINGS FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATION AND VERIFICATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. BURIED PIPELINES AND OTHER UTILITIES EXIST IN THE VICINITY OF ALL CONSTRUCTION AREAS. WHEN THE CONTRACTOR SHALL RETAIN AND PROTECT DURING PROGRESS OF WORK UNLESS OTHERWISE NOTED.
2. PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL LOCATE AND MARK WITH PAINT ALL UNDERGROUND UTILITIES, ELECTRICAL CABLES AND CONDUITS, AND COORDINATE WITH THE UTILITY COMPANIES AND THE FAA FOR ANY ADJUSTMENTS OR RELOCATIONS. CALL DIG LINE AT (800) 342-5866 PRIOR TO ANY EXCAVATION. CALL BILL BETH WITH THE FAA AT (509) 742-2501.
3. GEOTECHNICAL REPORT "GEOTECHNICAL EVALUATION PROPOSED AIRPORT OPERATIONS BUILDING" PREPARED BY ALLWEST, DATED AUGUST 4, 2016 AND "GEOTECHNICAL EVALUATION ADDENDUM" PREPARED BY ALLWEST, DATED JULY 3, 2017 ARE INCLUDED IN THE SPECIFICATIONS SECTION 02290. TEST PIT LOCATIONS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. SEE GEOTECHNICAL ENGINEERING EVALUATION FOR DETAILED INFORMATION REGARDING TEST PIT LOGS.
4. ALL DISTURBED SURFACES SHALL BE RESTORED IN ACCORDANCE WITH SPECIFICATION SECTION 32 02 00.

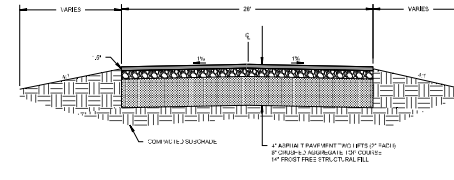
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
AIRPORT OPERATIONS BUILDING  
HILLSIDE REMOVAL BID ALTERNATE #3

DATE: 8/1/2017  
DRAWN BY: T-O ENGINEERS  
CHECKED BY: T-O ENGINEERS  
APPROVED BY: T-O ENGINEERS  
SHEET 07.0 OF 10



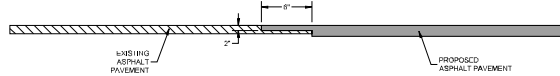
TYPICAL SECTION - PUBLIC ACCESS ROAD / SOUTH ENTRANCE ROAD / PARKING LOT

N.T.S. 1/8" = 1'-0"



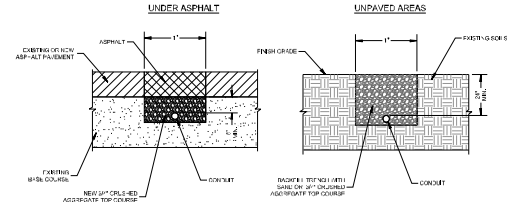
TYPICAL SECTION - RESPONSE ROAD

N.T.S. 1/8" = 1'-0"



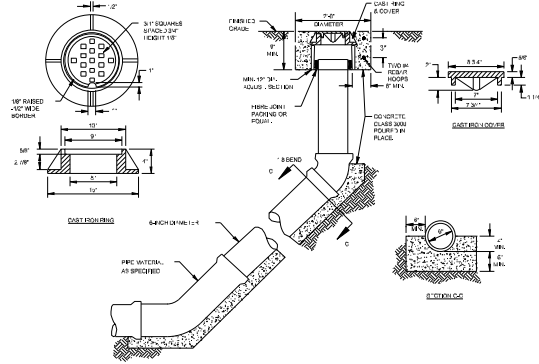
LAP JOINT PAVING DETAIL

N.T.S. 1/8" = 1'-0"



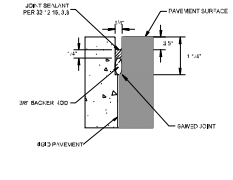
CONDUIT TRENCH DETAIL

N.T.S. 1/8" = 1'-0"



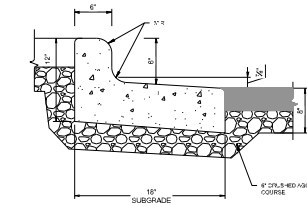
CLEANOUT

N.T.S. 1/8" = 1'-0"



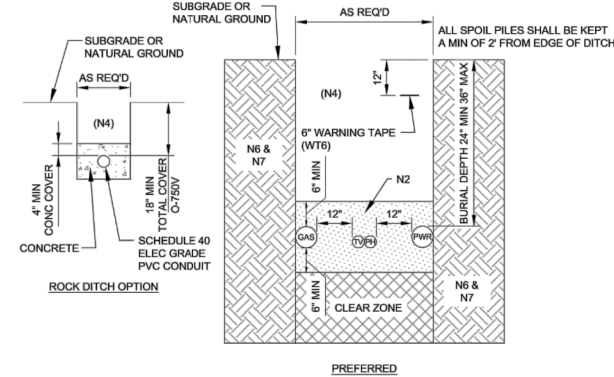
RIGID TO FLEXIBLE PAVEMENT JOINT SEALANT DETAIL

N.T.S. 1/8" = 1'-0"



REJECT CURB

N.T.S. 1/8" = 1'-0"



SERVICE DITCH

N.T.S. 1/8" = 1'-0"

- NOTES**
1. GAS SERVICE PIPE AND ELECTRIC CONDUIT SHOULD NOT BE RUN IN THE WATER DITCH. (WITH) REQUIRES 12" SEPARATION BETWEEN WATER MAINS AND ELECTRIC CABLE.
  2. BEDDING AND RIGGING FOR SERVICES IN CONDUIT SHALL BE CLASSIFIED AS "SELECT BACK FILL". SELECT BACKFILL IS CLEAN, SCREENED MATERIAL CONSISTING OF 1/2" MAXIMUM ROCK AND SAND, FREE OF RUBBER, ONIONS, CHEMICAL REFUSE OR OTHER MATERIALS THAT COULD CAUSE DAMAGE TO THE CONDUIT.
  3. ALL CONDUIT MUST PASS AVISTA UTILITIES INSPECTION.
  4. APPROVED BACKFILL SHALL NOT CONTAIN ANY ROCK LARGER THAN 4 INCHES.
  5. ELECTRIC AND COMMUNICATION CABLES MAY BE INSTALLED WITH LESS THAN 12 INCHES SEPARATION WHEN THE GENERAL JOINT USE REQUIREMENTS AND THE REQUIREMENTS OF THIS STANDARD ARE MET. ALL PARTIES WITH LESS THAN 12 INCHES SEPARATION MUST AGREE TO RANDOM LAY.
  6. ALL CABLES MUST HAVE AT LEAST 12 INCHES RADIAL SEPARATION FROM URBAN STRUCTURES SUCH AS NATURAL GAS LINES, FUEL LINES, BUILDING FOUNDATIONS, OTHER CABLES NOT IN RANDOM LAY, ETC.
  7. GAS SERVICES SHOULD BE INSTALLED WITH A 5' MINIMUM LONGITUDINAL SEPARATION FROM SEWER UTILITY PIPELINE OR STORM DRAIN OR AT FURTHER DISTANCES AS SPECIFIED BY THE APPROPRIATE REGULATING AGENCY.

REVIEWED FOR CODE COMPLIANCE



DATE	REVISION	BY	CHKD	APP'D
10/1/2017	1	10/1/2017	10/1/2017	10/1/2017
10/1/2017	2	10/1/2017	10/1/2017	10/1/2017
10/1/2017	3	10/1/2017	10/1/2017	10/1/2017
10/1/2017	4	10/1/2017	10/1/2017	10/1/2017
10/1/2017	5	10/1/2017	10/1/2017	10/1/2017
10/1/2017	6	10/1/2017	10/1/2017	10/1/2017
10/1/2017	7	10/1/2017	10/1/2017	10/1/2017
10/1/2017	8	10/1/2017	10/1/2017	10/1/2017
10/1/2017	9	10/1/2017	10/1/2017	10/1/2017
10/1/2017	10	10/1/2017	10/1/2017	10/1/2017

LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
AIRPORT OPERATIONS BUILDING  
PAVING, GRADING, AND DRAINAGE DETAILS



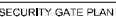
CHAIN LINK FENCE DETAIL



N.T.S.	2	PEDESTAL AND CARD READER DETAIL
--------	---	---------------------------------



N.T.S.	3
--------	---



1. GATE FRAME SHALL BE A HEAVY-DUTY CANTILEVER ALUMINUM SLIDE GATE
2. GATE OPERATOR = 1-HP VARIABLE - SPEED HEAVY DUTY GATE OPERATOR. DETAILS ON THIS SHEET SHALL BE ADJUSTED TO FIT ACTUAL GATE OPERATOR.



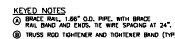
## SECURITY GATE ELEVATION



N.T.S.	7
--------	---



N.T.S.



MAN GATE WITH CARD READER

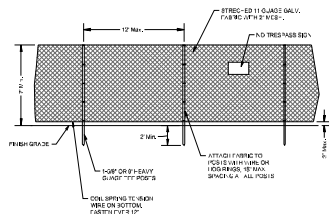


N.T.S.	$\frac{8}{4}$
--------	---------------

TEMPORARY SECURITY FENCE
--------------------------

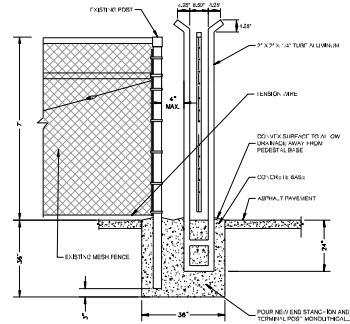
N.T.S.	9
--------	---

© 2017 T-O ENGINEERS. THIS INSTRUMENT IS THE PROPERTY OF T-O ENGINEERS. ANY REPRODUCTION, REUSE OR MODIFICATION OF THIS INSTRUMENT WITHOUT SPECIFIC WRITTEN PERMISSION OF T-O ENGINEERS IS STRICTLY PROHIBITED.



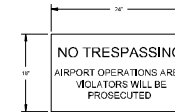
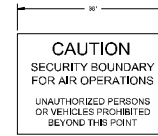
#### NOTES

1. CONTRACTOR WILL BE RESPONSIBLE FOR UTILITY LOCATIONS PRIOR TO ANY INSTALLATION. FOR PILES ARE ALLOWING AS MANY LINES AS POSSIBLE TO BE INSTALLED. ALL 3/4\"/>



#### NOTES

1. CONTRACTOR SHALL MATCH ALL EXISTING FENCE LAYOUT AND ATTACHMENT LOCATIONS TO NEW STATIONING DETAILS.
2. ALL ATTACHMENT MATERIALS, ADHESION AND EQUIPMENT SHALL BE CONSIDERED IDENTICAL TO THE EXISTING INSTALLATION.
3. ALL SUPPLY OF FENCE LINES AND NON-CONCRETE ROAD SHALL BE DELIVERED AT ALL TIMES AND BE APPROVED BY AIRPORT SECURITY.



#### NOTES

1. SIGNS SHOWN IN DETAIL ARE FOR GENERAL REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SIGN MESSAGES, COLORS AND FONT SIZES FOR PROPOSED GATE SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR EACH INDIVIDUAL SIGN TO ENSURE FOR APPROVAL FROM T-O ENGINEERING.

CONSTRUCTION FENCE- DRIVEN POST

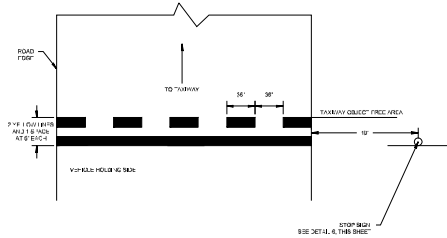
N.T.S.

END STATION DETAIL

N.T.S.

GATE AND FENCE SIGN DETAILS

N.T.S.



NON-MOVEMENT AREA MARKING AND STOP SIGN DETAIL

N.T.S.

ROADWAY EDGE MARKING

N.T.S.

NON-MOVEMENT AREA STOP SIGN DETAIL

N.T.S.

SECURITY GATE STOP SIGN DETAIL

N.T.S.

REVIEWED FOR CODE COMPLIANCE

LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)  
AIRPORT OPERATIONS BUILDING  
FENCING GATE AND STRIPING DETAILS

DATE: 08/17/2017  
DRAWN BY: [blank]  
CHECKED BY: [blank]  
APPROVED BY: [blank]

SHEET 10 OF 10

**SECTION 33 11 00 – WATER DISTRIBUTION**

**PART 1 - GENERAL**

**1.1 DESCRIPTION.**

- A.** Work Included. This section covers work necessary to construct the water distribution system, and service lines; system appurtenances such as valves and hydrants; testing; and related items shown on the drawings and specified here. See Division 21 for Fire Lines.

The work under this section shall also includes excavation, trenching and backfill necessary for installation of pipelines, ditches, utilities and appurtenances.

- B.** Related Work:

1. Work under this section shall conform to the requirements of the City of Lewiston Public Works Department.
2. Work not specifically addressed in City of Lewiston Standards shall conform to the requirements of Section 400 of the IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (SPWC), as amended, and as supplemented or modified herein or on the drawings.

**1.2 QUALITY ASSURANCE.**

- A.** Standard Specifications. The Contractor shall provide and maintain on the job site current copies of the City of Lewiston Standards for Public Works Construction and the Idaho Standards for Public Works Construction.
- B.** Material Storage. Current invoices must demonstrate that all pipe is new and has received proper storage shall be available for inspection by the Engineer.
- C.** Certification Requirement. The Contractor shall furnish certification by the manufacturer that all pipe and fittings furnished on the project comply with applicable specifications.
- D.** Product Identification: All pipe shall be clearly marked with type, class, and/or thickness as applicable. Letter shall be legible and permanent under normal conditions of handling and storage.

## **PART 2 - MATERIALS**

### **2.1 PIPE.**

- A.** Water Main pipe shall be as shown on the Plans: ductile iron (DI) conforming to the provisions of AWWA C151, Class 50, cement-mortar lined; or polyvinyl chloride (PVC) conforming to the provisions of AWWA C900, Class 150, SDR 18.
- B.** Fire Hydrant laterals shall be ductile iron (PI) conforming to City of Lewiston Standard Drawing No. 4-12.
- C.** Fire Line pipe shall be per Division 21.
- D.** Service Lines 2 inches in diameter or smaller shall be as shown on the Plans: conforming to City of Lewiston Standard Drawings.

### **2.2 FITTINGS.**

- A.** Fittings. All fittings for water mains and fire service lines shall be mechanical joint or flanged ductile iron conforming to AWWA C110.
- B.** Fittings for fire hydrant assemblies shall be as shown on City of Lewiston Standard Drawing No. 4-12.
- C.** Fittings for water services shall conform to City of Lewiston standards.

### **2.3 VALVES AND VALVE BOXES.**

- A.** Gate valves shall be resilient-seated gate valves conforming to AWWA C509 and shall comply with City of Lewiston Standards. Gate valves shall be mechanical joint (MJxMJ) or mechanical joint by flanged joint (MJxFL) as necessary.
- B.** Valve boxes shall comply with City of Lewiston Standards.

### **2.4 FIRE HYDRANTS.**

Fire hydrants shall be as shown on the Plans: conforming to City of Lewiston Standards.

### **2.5 WATER SERVICE AND METER CONNECTION.**

Water meter vaults shall conform to City of Lewiston Standards.

### **2.6 TRACER WIRE.**

Tracer wire (Locate Wire) shall be No. 12 AWG copper with insulation. Identifying tape shall conform to City of Lewiston Standard Drawing No. 1-8.



**2.7 BEDDING.**

Pipe bedding / pipe zone material shall conform to City of Lewiston Standard Drawing No. 1-4 or 1-6, as applicable.

**2.8 CONCRETE THRUST BLOCKS.**

Concrete shall be class 3,000 psi concrete per Section 03 30 00 Cast-In-Place Concrete.

**2.9 BACKFILL.**

Trench backfill shall conform to City of Lewiston Standard Drawing No. 1-4 or 1-6, as applicable.

**PART 3 - CONSTRUCTION METHODS**

**3.1 GENERAL.**

All pipelines and appurtenances shall be installed according to manufacturer's recommendations, City of Lewiston Standards for Public Works Construction, and ISPWC, Division 400, Water.

**3.2 EXCAVATION AND BACKFILL.**

- A.** Excavated trenches shall be completely dewatered until pipe is placed and backfilled. The ends of the pipe shall be sealed to prevent water from entering the pipe. Any pipe having its alignment or grade changed as a result of a flooded trench shall be re-laid at no cost to the owner.
  - B.** Trench excavation shall conform to the requirements of ISPWC Division 300 – Trenching. See Specification Section 31 23 45, Trench Excavation and Backfill.
  - C.** Bedding shall be placed and compacted per City of Lewiston Standard Drawing No. 1-4 or 1-6, as applicable.
  - D.** Trench backfill shall conform to per City of Lewiston Standard Drawing No. 1-4 or 1-6, as applicable. See Specification Section 31 23 45 Trench Excavation and Backfill.
- 3.3 PIPE INSTALLATION.**
- A.** Minimum burial depth for all water mains, fire lines, and hydrant laterals shall be 4 feet from finish grade to the top of pipe, as shown on City of Lewiston Standard Drawing No. 4-5.
  - B.** Minimum Horizontal Distance. Maintain 3 feet minimum horizontal distance to other utilities unless otherwise noted on the drawings.

- C.** Separation requirements shown on City of Lewiston Standard Drawing No. 4-1 and specified in Section 405, Non-Potable Water Line Separation, of the ISPW/C Specifications shall apply to both mainlines and service lines. Where sewer lines and services do not conform to the separation requirements, water class pipe is required.
- D.** Water service lines shall be constructed in accordance with City of Lewiston Standard Drawing No. 4-5 through 4-10.
- 3.4 FIRE HYDRANTS.**

Fire hydrants shall be installed per City of Lewiston Standard Drawings No. 4-12. Place 24 inch diameter x 9 inch concrete collar with two #4 rebar hoops around valve box.
- 3.5 WATER METER VAULT.**

The Contractor shall install meter vaults per City of Lewiston Standard Drawings No. 4-5 through 4-10.
- 3.6 THRUST BLOCKS.**

Place thrust blocks at each angled fitting, tee, cross, reducer, cap, plug and valve in accordance with City of Lewiston Standard Drawing No. 4-4.
- 3.7 LOCATING WIRE.**

Tracer wire and Identifying Tape shall be placed on top of all water lines. The tracer wire shall be accessible at all valve boxes and shall be extended along the outside of the lower portion of the valve box and along the inside of the upper portion, as shown on City of Lewiston Standard Drawing No. 4-2.
- 3.8 PIPE MARKERS.**

Place standard service marker per Standard Drawing SD-512 of the ISPW/C to mark any service lines that terminate underground.
- 3.9 PRESSURE TESTING.**

The Contractor shall flush all lines prior to pressure testing, and shall test all lines installed prior to connecting to City lines in accordance with City of Lewiston standards. All pressure tests shall be witnessed by the City. Coordinate work with the City at least 2 weeks in advance.
- 3.10 FLUSHING AND DISINFECTION.**

  - A.** Swabbing: The Contractor shall swab or spray the interior of all pipe and fittings with a 1% hypochlorite solution before installation.
  - B.** Following successful pressure testing, the City will disinfect the water lines and take two (2) sets of construction BacT's at the Contractor's expense. The Contractor must coordinate the work with the City at least 2 weeks in advance.
  - C.** If BacT samples pass, tie-in will be allowed.

- D.** Redisinfection: If the initial disinfection fails to produce approved bacteriological samples, the Contractor shall re-flush the lines, and re-schedule flushing and disinfection with the City. This process shall be repeated until passing test results are obtained, all at the Contractor's expense.

### **3.11 CONNECTIONS TO EXISTING MAINS.**

- A.** After successful flushing and disinfection, the Contractor shall schedule connection procedures with the City of Lewiston Water Department. Hot taps to existing mains shall be made by the City. Following completion of pressure testing and chlorination, the Contractor shall make the final connection from the new system to the hot tap, which must be witnessed by the City. Coordinate the work with the City at least 1 week in advance.
- B.** The Contractor shall not open or close any City water valves without prior approval, except in case of emergency.
- C.** Under City supervision, the Contractor shall:
1. Expose existing main and verify line size and type of pipe.
  2. Furnish all necessary fittings to make connection.
  3. Swab or spray the interior of all pipe and fittings with a 1% hypochlorite solution.
  4. Make the connection to the hot tap. The maximum allowable pipe gap at couplings is 1/2 inch.
  5. Backfill and compact upon City approval.

### **3.12 AS-BUILT SURVEY AND RECORD DRAWINGS.**

- A.** All changes in pipeline direction and special fittings must be recorded with survey grade accuracy and submitted on record drawings.

### **PART 4 - MEASUREMENT AND PAYMENT**

No separate measurement for payment will be made for work required by this specification, as this work shall be considered incidental to exterior site improvements.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

**SECTION 33 33 00 – SANITARY SEWERS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION.**

- A.** Work Included. The work shall include sewage collection main lines, encasements and all other appurtenant items specified herein. Also included shall be the flushing and testing of all collection system facilities.
- B.** Related Information.
  - 1. Work under this Specification Section shall conform to the requirements of the City of Lewiston Public Works Department, and Division 500 - Sewer of the IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPMC), and related sections as amended, supplemented, or modified herein or as shown on the plans.
  - 2. Trenching and excavation shall conform to the requirements Section 31 23 45 Trench Excavation and Backfill.

**1.2 PERMITS.**

The Contractor shall be responsible for obtaining all permits required to complete the work in this section. No person shall construct, extend, relay, repair, or connect to a building wastewater line without first obtaining a permit. Each connection to the City Wastewater System shall be inspected and approved by a City inspector.

**1.3 PRODUCT DELIVERY, STORAGE AND HANDLING.**

- A.** All Materials. Proper implements, tools and facilities shall be provided and used by the Contractor for the safe and efficient execution of material handling and related work. Materials are to be handled so as to avoid shock, abrasion or other damage to them. Under no circumstances shall any materials be dropped. Extra care in handling should be taken when the temperature approaches and drops below freezing.

In distributing the material at the site of work, each piece shall be unloaded opposite or near where it is to be installed or placed in suitable stockpiles. Individual lengths of pipe shall be stockpiled no higher than 5 feet, or less, if recommended by the manufacturer. Pipe shall be stored on a flat surface so the barrel is evenly supported. It is recommended that only as much pipe as can be laid during the day shall be strung out along the ditch to prevent damage, theft, or vandalism. In no case shall pipe be strung so as to interfere with traffic or other access to property or buildings.

- B.** PVC materials shall not be stored in direct sunlight for prolonged periods. Covering with an opaque material may be necessary. Since scratches, cuts and excessive exposure to direct sunlight decrease the strength of PVC pipe, such defects shall be grounds for rejection of the material. The Contractor is urged to take precautions to avoid abrading or cutting the pipe.
- C.** Defective or Damaged Material. All such material designated and marked by the Engineer shall be rejected and removed from the job site work area immediately.

## **PART 2 - MATERIALS**

### **2.1 MATERIALS.**

- A.** Pipe bedding / pipe zone material shall conform to City of Lewiston Standard Drawing No. 1-4 or 1-6, as applicable.
- B.** Backfill Outside Paved Areas. Materials suitable for backfill of pipe trenches outside paved areas shall be native material obtained from trench excavation.
- C.** Backfill Under Pavement. Material for backfill of pipe trenches under areas to be paved shall be per City of Lewiston Standard Drawing No. 1-4 or 1-6, as applicable. Use of controlled low-strength material (CLSM) per Specification Section 31 23 33 may be allowed with prior approval.
- D.** Polyvinyl Chloride (PVC) Pipe and Fittings. Polyvinyl chloride (PVC) pipe and fittings shall comply with the following specification requirements.
1. ASTM D 3034, SDR 35. Diameter refers to inside pipe diameter.
  2. All pipe shall be marked at intervals of no less than 5 feet with normal pipe size, SDR number, Type, "Non-Potable Water", appropriate ASTM number, and working pressure.
  3. Joints shall conform to ASTM D 3212 for integral bell, bell and spigot type joints.
  4. Gaskets shall conform to ASTM F 477.
- E.** Cleanout Frame and Cover shall be traffic-rated, made of cast iron of the size and shape shown on ISPWC Standard Drawing SD-506 Standard 6-Inch Traffic Rated Cleanout.
- F.** Concrete collars around cleanout frames installed in asphalt pavement shall be class 3,000 psi concrete per Section 03 30 00 Cast-In-Place Concrete. Concrete collars around cleanout frames installed in concrete pavement shall match the adjacent pavement class.



## **PART 3 - CONSTRUCTION METHODS**

### **3.1 PREPARATION.**

The locations of all piping and appurtenances shown on the drawings or called for in the specifications that are not specifically located by dimensions or elevations, are approximate only. Exact locations and dimensions necessary for proper installation shall be determined at the project site and shall be reviewed and/or accepted by the Engineer prior to installation. The Contractor is responsible for the proper location of all piping and appurtenances.

### **3.2 CONSTRUCTION SURVEYING AND STAKING.**

The Contractor is responsible for staking lines and grades for sewer lines. Grade and line shall be established from batterboards set along the trench at maximum 50 foot intervals or a laser.

### **3.3 PIPE INSTALLATION.**

**A.** General: Pipe placement shall conform to manufacturer's recommendations. Materials shall not be dropped into the trench but shall be lowered by either hand or machine. Pipe laying shall proceed upgrade with the spigot ends of bell and spigot pipe pointing in the direction of flow.

The entire surface of all pipe shall be clean when laid. Interior surfaces of pipe sockets shall be cleaned when the pipe is laid and the joints completed. During pipe laying operations, no debris, tools, clothing or other material shall be placed in the pipe. When pipe laying operations are not being conducted or are temporarily suspended, all pipe openings are to be plugged with an appropriate size sewer plug. Pipes shall not be trimmed except for closures. Pipes not making a good fit shall be removed from the job site.

Each pipe length shall be laid true to line and grade in such a manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets to the flow line. No pipes are to be placed in the trench or final joints made, until fine grading of the trench bottom to the desired invert elevation and/or stabilization of an unstable trench has been completed. The grade shall be uniform. Immediate partial backfill may be required along some portions of the sewer pipe to prevent additional accidental deflection of the pipe.

At the end of the day's work, the end of the last pipe shall be blocked in such a manner as may be required to prevent creep and shall be tightly plugged to prevent entrance of dirt, vermin, or debris into the pipe.

In general, sewer lines shall not be curved. In special cases, to be accepted by the Engineer, curved sewers may be allowed. The minimum radius of curvature shall then be in conformance with the specifications of the pipe manufacturer.

Sewer mains and service lines are to be installed with a minimum of 10 feet clear distance from potable water mains and services. If this cannot be accomplished, construction shall be per ISPWC Section 405 Non-Potable Water Line Separation and ISPWC Standard Drawing SD-407 Potable and Non-Potable Water Line (NPWL) Separation.

### **3.4 CONNECTION TO EXISTING SEWER MAINS.**

Connections to existing pipelines shall be per City of Lewiston Standard Drawing No. 5-1 and the requirements of ISPWC Section 504.3.3.

### **3.5 MAINTAIN SEWER FLOW.**

The Contractor is responsible to maintain sewer flow at all times. For active sewer lines, prepare a plan for maintaining sewer flow, subject to approval by the Engineer. Prior to manhole or pipe removal, implement bypass flow procedures in accordance with approved plan.

Wastewater shall not be permitted to flow in open trench. Back-up capabilities must be provided for in the event of mechanical failure of bypass pumping. The Contractor shall monitor flow levels in pipeline to ensure not backing up to unacceptable levels. The Contractor is responsible for damage resulting from backing up flow.

All materials and equipment used to control and/or divert flow, including, but not limited to pumps, plugs, and pipes, shall be designed and made of materials compatible with and capable of handling sewage flows without leaks or contamination of surrounding soils or surface property.

### **3.6 STANDARD SERVICE MARKER.**

Place standard service marker per Standard Drawing SD-512 of the ISPWC to mark any service lines that terminate underground.

### **3.7 FIELD QUALITY CONTROL.**

**A.** General. Sections of pipeline shall be tested as soon as practical after laying. No more than 2,000 feet or 25 percent of the project pipeline (whichever is greater) shall be installed without testing unless the prior permission of the Engineer has been obtained. The following tests will be performed on all mains and service lines following the compaction of the trench backfill. All testing is the responsibility of the Contractor.

1. Alignment and Grade. Sewer pipeline will be checked by the Engineer to determine whether any displacement of the pipe has occurred. The test will be as follows: A light will be flashed between manholes or if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. Proper alignment shall consist of a "full moon" to be clearly visible at the opposite end of the line from the observer's location. If the illuminated interior of the pipeline shows poor alignment, displaced pipe, debris in the pipe, or any other defects, the defects as noted by the Engineer shall be corrected by the Contractor before commencing with the installation of additional sections. Tests will be repeated after completion of repair and backfill as necessary to meet the contract requirements.
2. Prior to the "lamping" test for alignment, the Contractor shall put water in the upper section of the line and let it flow out through the new lines and manholes. During the "lamping" tests, the Engineer shall check for standing water indicating sags or settled sections of pipe or manholes. The maximum amount of standing water in any pipe or manhole shall be 3 percent of the pipe's diameter or 1/2-inch whichever is the smallest amount.
3. Maximum deviation from true line or grade shall be 3/8 inch.
4. Leakage. After alignment tests are completed, tests for watertightness of sewer line shall be made by the Contractor in the presence of the Engineer. Air pressure testing or Hydrostatic Exfiltration testing in accordance with the City of Lewiston Standard and ISPWC Section 501 – Gravity Sewers shall be conducted.
5. Deflection. Following backfill the Contractor shall test all pipes for deflection with a five percent tolerance "Go-No-Go" gauge. The Contractor shall reinstall or replace all pipe failing deflection testing.
6. Pipe Cleaning. Prior to deflection testing, clean the completed pipeline with a hydro-cleaner, or other Engineer approved cleaning equipment, and provide a pipeline free of dirt, mud, rocks, or other material. Leave downstream plugs in place during cleaning and do not introduce foreign material into existing sewer lines.

#### **PART 4 - MEASUREMENT AND PAYMENT**

No separate measurement for payment will be made for sanitary sewer work items, as this work shall be considered incidental to exterior site improvements.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK