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.

2471 S. Titanium Place, Meridian, ID 83642 Phone (208) 323-2288 Fax (208) 323-2399 info@to-engineers.com to-engineers.com

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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.

2471 S. Titanium Place, Meridian, ID 83642 Phone (208) 323-2288 Fax (208) 323-2399 info@to-engineers.com to-engineers.com

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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

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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

2471 S. Titanium Place, Meridian, ID 83642 Phone (208) 323-2288 Fax (208) 323-2399 info@to-engineers.com to-engineers.com

CIVIL SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C1.0	SITE SURVEY
C2.0	CIVIL SITE PLAN
C3.0	CONSTRUCTION SAFETY AND PHASING
C4.0	SITE UTILITY PLAN
C5.0	GRADING AND DRAINAGE PLAN
C6.0	PAVING PLAN
C7.0	HILLSIDE REMOVAL BID ALTERNATE #3
C8.0	PAVING, GRADING, AND DRAINAGE DETAILS
C9.0	FENCING AND GATE LAYOUT
C10.0	FENCING GATE AND STRIPING DETAILS

0 30 60 120 180
FEET

LEGEND

EXISTING PAVEMENT
EXISTING FENCE
PROPERTY LINE
RIGHT OF WAY
SURVEY CONTROL POINT
TP-1 TEST PIT LOCATIONS 1-8 (SEE GEOTECHNICAL REPORT DATED 8/4/16)
TP-13 TEST PIT LOCATIONS 9-17 (SEE GEOTECHNICAL REPORT ADDENDUM DATED 7/3/17)

Survey Control Information			
Point #	Description	Coordinates	Elevation
10	SET REBAR & CAP	N: 1717082.475 E: 2304618.433	1454.86'
158	FND RB TBM4	N: 1717923.127 E: 2303629.946	1429.34'
159	FND RB TBM8	N: 1717669.941 E: 2305108.329	1435.85'
160	NGS BM LWS F	N: 1717672.690 E: 2305399.190	1437.10'
236	SET PK	N: 1717000.290 E: 2304492.626	1444.84'

NOTES

1. EXISTING SURVEY MONUMENTS SHALL BE PROTECTED.
2. 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 WHICH THE CONTRACTOR SHALL RETAIN AND PROTECT DURING PROGRESS OF WORK UNLESS OTHERWISE NOTED.
3. 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) 342-1585 PRIOR TO ANY EXCAVATION. CALL BILL SETH WITH THE FAA AT (509) 742-2601.
4. 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 023200. TEST PIT LOCATIONS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. SEE GEOTECHNICAL ENGINEERING EVALUATION FOR DETAILED INFORMATION REGARDING TEST PIT LOGS.

REVIEWED FOR CODE COMPLIANCE

PROFESSIONAL ENGINEER REGISTERED 8351 STATE OF IDAHO CHRISTOPHER H MANSFIELD 7/3/2017

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
MERIDIAN, ID 83642
PHONE: (208) 323-2288 FAX: (208) 323-2399
OFFICES ALSO IN: COEUR d'ALENE, IDAHO; NAMPA, IDAHO; SPOKANE, WASHINGTON

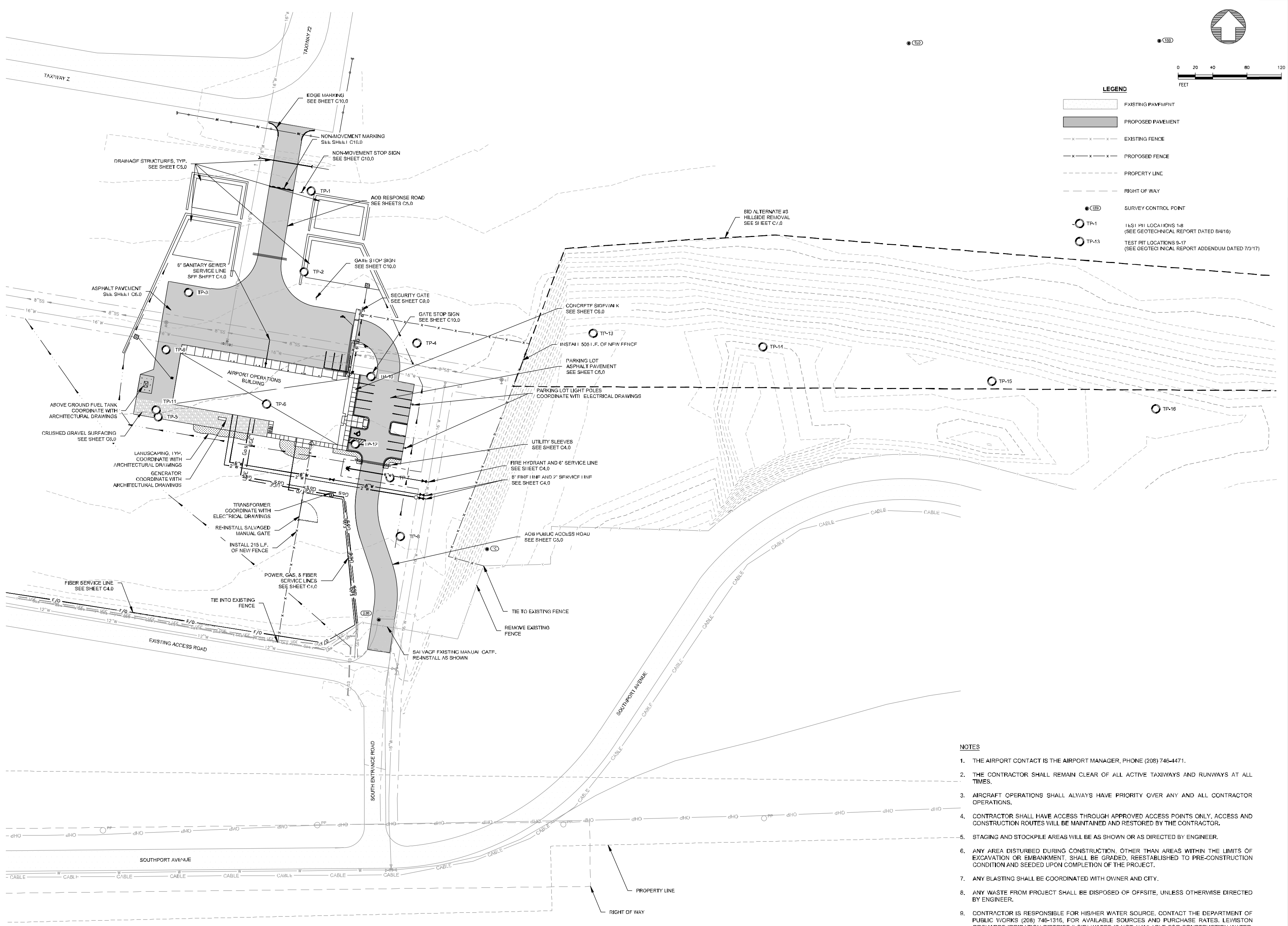
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

SITE SURVEY

DATE: JULY 2017
PROJECT: 160170

SHEET C1.0 OF 10



NOTES

1. THE AIRPORT CONTACT IS THE AIRPORT MANAGER, PHONE (208) 746-4471.
2. THE CONTRACTOR SHALL REMAIN CLEAR OF ALL ACTIVE TAXIWAYS AND RUNWAYS AT ALL TIMES.
3. AIRCRAFT OPERATIONS SHALL ALWAYS HAVE PRIORITY OVER ANY AND ALL CONTRACTOR OPERATIONS.
4. CONTRACTOR SHALL HAVE ACCESS THROUGH APPROVED ACCESS POINTS ONLY. ACCESS AND CONSTRUCTION ROUTES WILL BE MAINTAINED AND RESTORED BY THE CONTRACTOR.
5. STAGING AND STOCKPILE AREAS WILL BE AS SHOWN OR AS DIRECTED BY ENGINEER.
6. ANY AREA DISTURBED DURING CONSTRUCTION, OTHER THAN AREAS WITHIN THE LIMITS OF EXCAVATION OR EMBANKMENT, SHALL BE GRADED, REESTABLISHED TO PRE-CONSTRUCTION CONDITION AND SEEDED UPON COMPLETION OF THE PROJECT.
7. ANY BLASTING SHALL BE COORDINATED WITH OWNER AND CITY.
8. ANY WASTE FROM PROJECT SHALL BE DISPOSED OF OFFSITE, UNLESS OTHERWISE DIRECTED BY ENGINEER.
9. CONTRACTOR IS RESPONSIBLE FOR HIS/HER WATER SOURCE. CONTACT THE DEPARTMENT OF PUBLIC WORKS (208) 746-1316, FOR AVAILABLE SOURCES AND PURCHASE RATES. LEWISTON ORCHARDS IRRIGATION DISTRICT (LOID) WATER IS NOT AVAILABLE FOR CONSTRUCTION WATER. CITY HYDRANTS MAY BE AVAILABLE AS A SOURCE OF WATER FOR CONSTRUCTION PURPOSES. COORDINATION WITH THE CITY OF LEWISTON WATER DEPARTMENT WILL BE NECESSARY.
10. LANDSCAPING N.I.C. SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
11. SEE CITY OF LEWISTON INSPECTION CHECKLIST, PER ADDENDUM NO.3, EXHIBIT 1.

REVIEWED FOR CODE COMPLIANCE

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
MERIDIAN, IDAHO 83642-6703
PHONE: (208) 323-2288 FAX: (208) 323-2399
OFFICES ALSO IN: COEUR d'ALENE, IDAHO; NAMPA, IDAHO; SPOKANE, WA

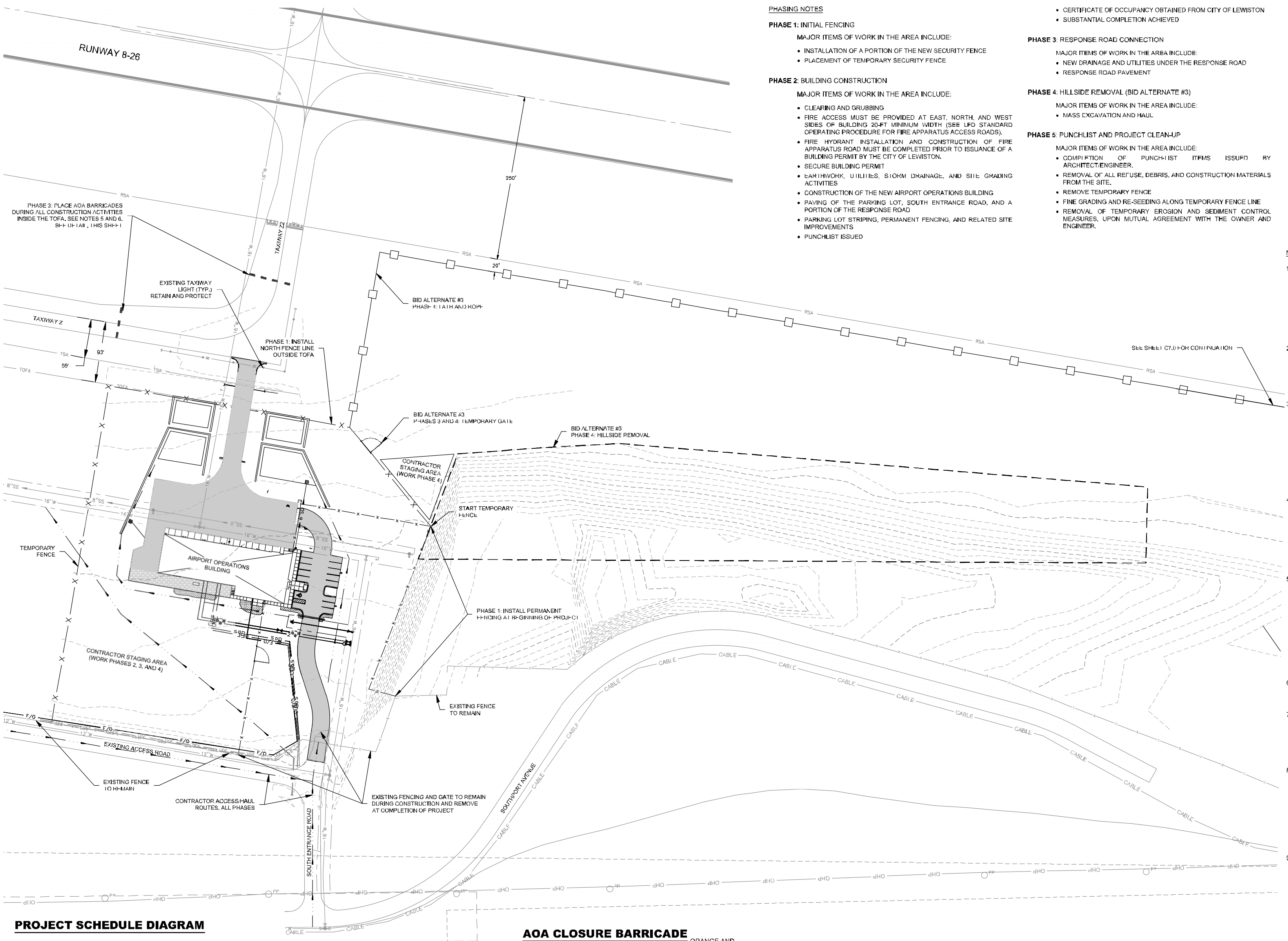
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

CIVIL SITE PLAN

DATE: JULY 2017
PROJECT: 16017C

SHEET C2.0 OF 10



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 20-FT MINIMUM WIDTH (SEE LFD 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
- EARTHWORK, UTILITIES, STORM 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)

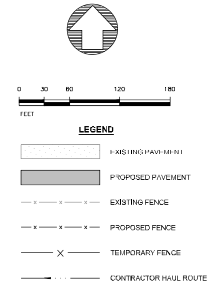
MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

- MASS EXCAVATION AND HAUL

PHASE 5: PUNCHLIST AND PROJECT CLEAN-UP

MAJOR ITEMS OF WORK IN THE AREA INCLUDE:

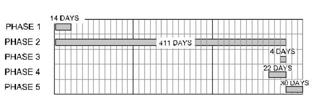
- COMPLETION OF PUNCH-LIST ITEMS ISSUED BY ARCHITECT/ENGINEER.
- REMOVAL OF ALL REFUSE, DEBRIS, AND CONSTRUCTION MATERIALS FROM THE SITE.
- REMOVE TEMPORARY FENCE
- FINE GRADING AND RE-SEEDING ALONG TEMPORARY FENCE LINE
- REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, UPON MUTUAL AGREEMENT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



NOTES

1. 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.
2. CONTRACTOR SHALL SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) TO THE AIRPORT OPERATOR FOR REVIEW AND APPROVAL PRIOR TO ISSUANCE OF NOTICE TO PROCEED. SEE SPECIFICATION SECTION 01 35 23 FOR DETAILS.
3. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIRPORT SECURITY IN 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 150/5370-2 "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.
4. TAXIWAY Z AND TAXIWAY Z2 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 Z2 OBJECT FREE AREAS (TOFA) DURING WORK PHASES 1, 2, 4, AND 5.
5. TAXIWAY Z AND TAXIWAY Z2 CLOSURE: TAXIWAY Z2 SHALL BE CLOSED FOR THE DURATION OF WORK PHASE 3. TAXIWAY Z SHALL BE CLOSED BETWEEN THE GENERAL AVIATION APRON AND TAXIWAY Z2 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 Z2 TOFA A MINIMUM OF 7 DAYS IN ADVANCE.
6. ALL PERSONNEL AND EQUIPMENT SHALL BE CONFINED TO THE IMMEDIATE WORK AREA AT ALL TIMES.
7. THE OWNER WILL DESIGNATE A PROJECT SAFETY OFFICER RESPONSIBLE FOR ISSUING, MAINTAINING AND UPDATING NOTAMS, WITH AUTHORITY IN MATTERS REGARDING AIRCRAFT OPERATIONS AND SAFETY. SEE SPECIFICATION SECTION 01 35 23.
8. 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 R.O.W. ALL SUCH SIGNS AND DEVICES SHALL COMPLY WITH THE LATEST EDITION OF MUTCD.
9. PROPOSED CHANGES TO STAGING AREA AND ACCESS/HAUL ROUTES MAY REQUIRE ADDITIONAL REVIEW BY FAA. IF ADEQUATE TIME FOR REVIEW IS NOT PROVIDED, PROPOSED CHANGES WILL BE DENIED.

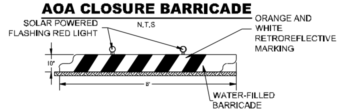
PROJECT SCHEDULE DIAGRAM



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

AOA CLOSURE BARRICADE

N.T.S



1. BARRICADES SHALL MEET REQUIREMENTS OF SPECIFICATION SECTION 01 35 23.
2. 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.
3. MAXIMUM GAP SPACING BETWEEN BARRICADES IS 4'. BARRICADE LIGHT SPACING IS 10' MAX.

REVIEWED FOR CODE COMPLIANCE

T-O ENGINEERS

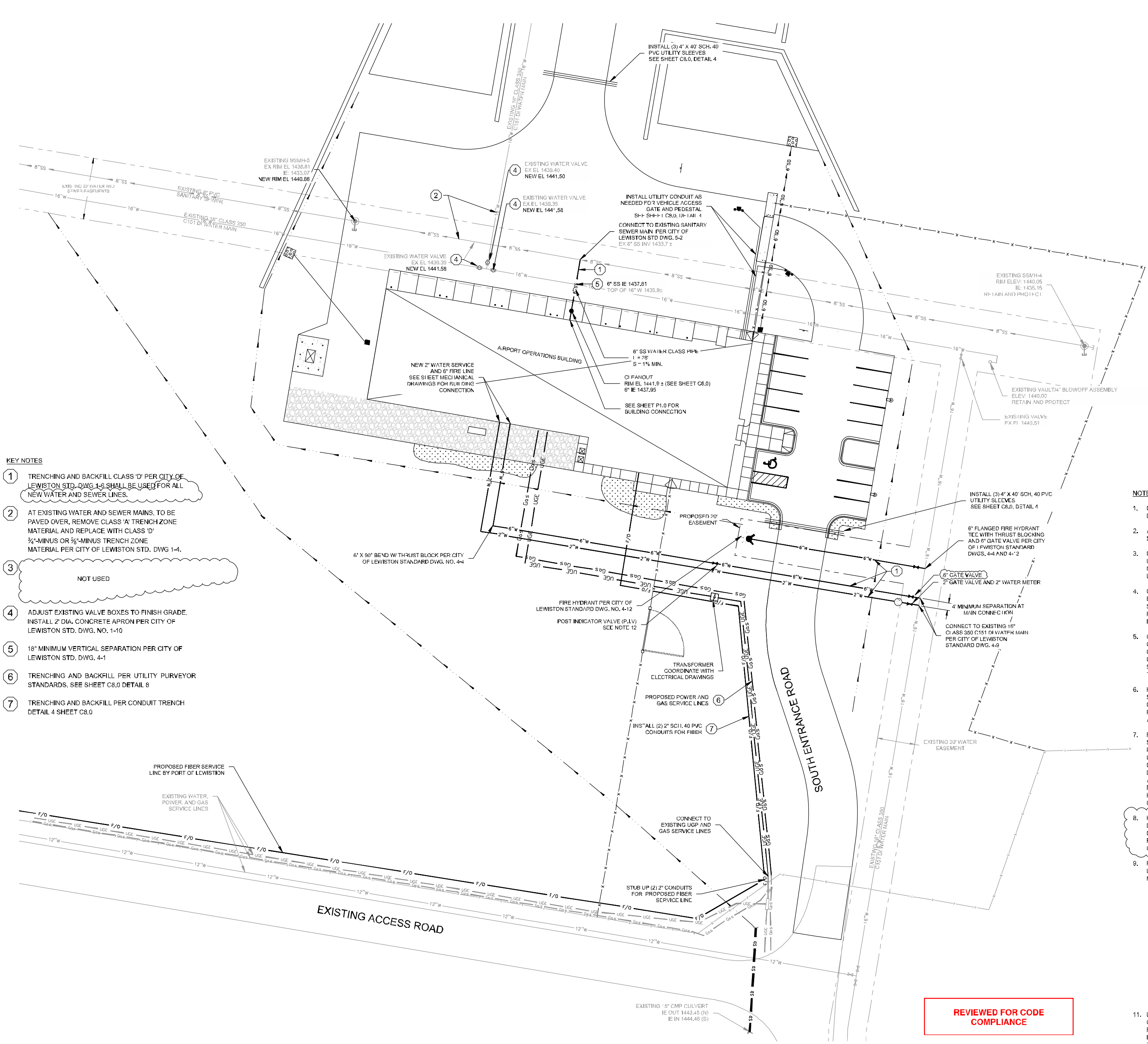
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

CONSTRUCTION SAFETY AND PHASING

DATE: JULY 2017

SHEET C3.0 OF 10



FEET 0 10 20 40 60

LEGEND

	EXISTING	PROPOSED
SANITARY SEWER	8"SS	6"SS
WATER	16"W	2"W
FIRE LINE		6"W
GAS	Gas	Gas
UNDERGROUND POWER	UGE	UGE
FIBER		F/O
CLEANOUT	○	●
FIRE HYDRANT		
VALVE		
WATER METER		○
V-DITCH		

KEY NOTES

1. TRENCHING AND BACKFILL CLASS 'D' PER CITY OF LEWISTON STD. DWG 1-5 SHALL BE USED FOR ALL NEW WATER AND SEWER LINES.
2. AT EXISTING WATER AND SEWER MAINS, TO BE PAVED OVER, REMOVE CLASS 'A' TRENCH ZONE MATERIAL AND REPLACE WITH CLASS 'D' ¾"-MINUS OR ⅝"-MINUS TRENCH ZONE MATERIAL PER CITY OF LEWISTON STD. DWG 1-4.
3. NOT USED
4. ADJUST EXISTING VALVE BOXES TO FINISH GRADE. INSTALL 2' DIA. CONCRETE APRON PER CITY OF LEWISTON STD. DWG. NO. 1-10
5. 18" MINIMUM VERTICAL SEPARATION PER CITY OF LEWISTON STD. DWG. 4-1
6. TRENCHING AND BACKFILL PER UTILITY PURVEYOR STANDARDS. SEE SHEET C8.0 DETAIL 8
7. TRENCHING AND BACKFILL PER CONDUIT TRENCH DETAIL 4 SHEET C8.0

NOTES

1. CONTRACTOR SHALL COORDINATE WITH CITY OF LEWISTON WATER DEPARTMENT FOR SHUTOFF OF EXISTING WATER.
2. ALL MATERIALS AND INSTALLATION SHALL CONFORM TO CITY OF LEWISTON STANDARDS. FIRE LINE SHALL BE CLASS 350 C151 DUCTILE IRON.
3. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES AT POINTS OF CONNECTION AND CROSSINGS PRIOR TO CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN SANITARY SEWER AND WATER LINES. ALL WATER LINES AT SEWER CROSSINGS SHALL BE LOCATED AT LEAST 18" ABOVE THE SEWER PIPE. IF THIS IS NOT PROVIDED, THE WATER LINE OR SEWER LINE SHALL BE INSTALLED PER CITY OF LEWISTON STANDARD DRAWING NO. 4-1.
5. CONTRACTOR SHALL PROVIDE A MINIMUM 0F 4 FEET OF COVER FROM TOP OF PIPE TO FINISHED GRADE ON FIRE LINES AND MAIN WATERLINES. CONTRACTOR SHALL PROVIDE A MINIMUM 0F 3 FEET OF COVER FROM TOP OF PIPE TO FINISHED GRADE ON SERVICE WATERLINES. CONTRACTOR SHALL PROVIDE ALL TRENCHING, MATERIALS AND LABOR INCLUDING TESTING AND DISINFECTING FOR WATER LINES.
6. HYDROSTATIC PRESSURE TESTING AND CHLORINATION OF ALL MATERIALS SHALL BE COMPLETED PRIOR TO CONNECTION TO EXISTING WATER MAINS. CONTRACTOR IS RESPONSIBLE FOR COMPLETING HYDROSTATIC PRESSURE TESTING OF ALL MATERIALS. CONTRACTOR SHALL PROVIDE ADDITIONAL PIPE RESTRAINTS AND PLUGS FOR PRESSURE TESTING.
7. FLUSHING, DISINFECTION AND BACTERIOLOGICAL TESTING OF THE PIPELINE SHALL BE PERFORMED BY THE CITY WATER DEPARTMENT BEFORE BEING PLACED INTO SERVICE. THE CONTRACTOR SHALL COORDINATE WITH THE CITY WATER DEPARTMENT IN ADVANCE. TAPS REQUIRED FOR CHLORINATION PURPOSES SHALL BE PROVIDED BY THE CITY WATER DEPARTMENT. THE CONTRACTOR SHALL ASSIST THE WATER DEPARTMENT AS MAY BE REQUIRED DURING THE DISINFECTION PROCESS. RECHLORINATION OF THE MAIN DUE TO FAILURE OF THE CONTRACTOR TO KEEP THE PIPE CLEAN DURING CONSTRUCTION SHALL BE CHARGED TO THE CONTRACTOR ON A TIME AND MATERIAL BASIS.
8. HOT TAPS TO EXISTING MAINS SHALL BE MADE BY THE CITY WATER DEPARTMENT. FOLLOWING COMPLETION OF PRESSURE TESTING AND CHLORINATION, THE CONTRACTOR SHALL MAKE THE FINAL CONNECTION FROM THE NEW SYSTEM TO THE HOT TAP. THE CONTRACTOR SHALL COORDINATE THE WORK AND PROVIDE TRENCHING AND BACKFILL.
9. FIRE HYDRANT ASSEMBLIES SHALL BE CONSTRUCTED PER CITY OF LEWISTON STANDARD DRAWING NO. 4-12. ALL NEW FIRE HYDRANTS SHALL MEET THE FOLLOWING REQUIREMENTS:
   a. NEW HYDRANT WILL BE WATEROUS PACER OR MUELLER CENTURIAN WITH STORZ ADAPTER(S).
   b. 6" MINIMUM SUPPLY FOR FIRE HYDRANT.
   c. IF COMBUSTIBLE BUILDING MATERIALS ARE USED (INCLUDING FRAMING) THE WATER SUPPLY (INCLUDING MAINS AND HYDRANTS) SHALL BE DESIGNED, INSTALLED, TESTED AND APPROVED BY THE FIRE DEPARTMENT PRIOR TO STOCKPILING COMBUSTIBLE BUILDING MATERIALS.
   d. WATER SUPPLY SYSTEMS FOR PHASED CONSTRUCTION SHALL PROVIDE REQUIRED FIRE FLOWS AT ALL PHASES.
   e. ALL FIRE HYDRANTS SHALL BE PROVIDED WITH A 5-INCH HARRINGTON HIHS STORZ ADAPTOR WITH THE APPROVED ATTACHED SEAL CAP AND AIRCRAFT CABLE.
   f. ALL NEW HYDRANTS SHALL BE INSTALLED SO THE 5-INCH PORT IS FACING TOWARD THE FIRE DEPARTMENT VEHICULAR ACCESS ROUTE (I.E.: ROAD, STREET, LANE, ETC.).
11. UNDERGROUND FIRE SERVICE MAINS AND ALL COMPONENTS SHALL CONFORM TO NFPA 24 MINIMUM STANDARD. THE PLANS SHALL BE REVIEWED AND APPROVED BY THE FIRE DEPARTMENT PRIOR TO INSTALLATION. STAMPED APPROVED PLANS MUST BE KEPT ON SITE FOR THE FIRE INSPECTOR.
12. P.I.V. TO BE LOCATED A MINIMUM OF 40' FROM BUILDING (NFPA 24).

PROFESSIONAL ENGINEER REGISTERED 8351 STATE OF IDAHO CHRISTOPHER H MANSFIELD 10/9/2017

E-FILE NAME	16017-C-03-UTIL PLAN
DESIGNED	CHM
DRAWN	NTJ
CHECKED	
APPROVED	

REVISIONS

NO.		DATE
	BID SET RELEASE	7/14/17
2	CITY OF LEWISTON PLAN REVIEW RESPONSE	8/4/17

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
MERIDIAN, IDAHO 83642-6703
PHONE: (208) 323-2288 FAX: (208) 323-2399
OFFICES ALSO IN: COEUR d'ALENE, IDAHO; NAMPA, IDAHO; SPOKANE, WA

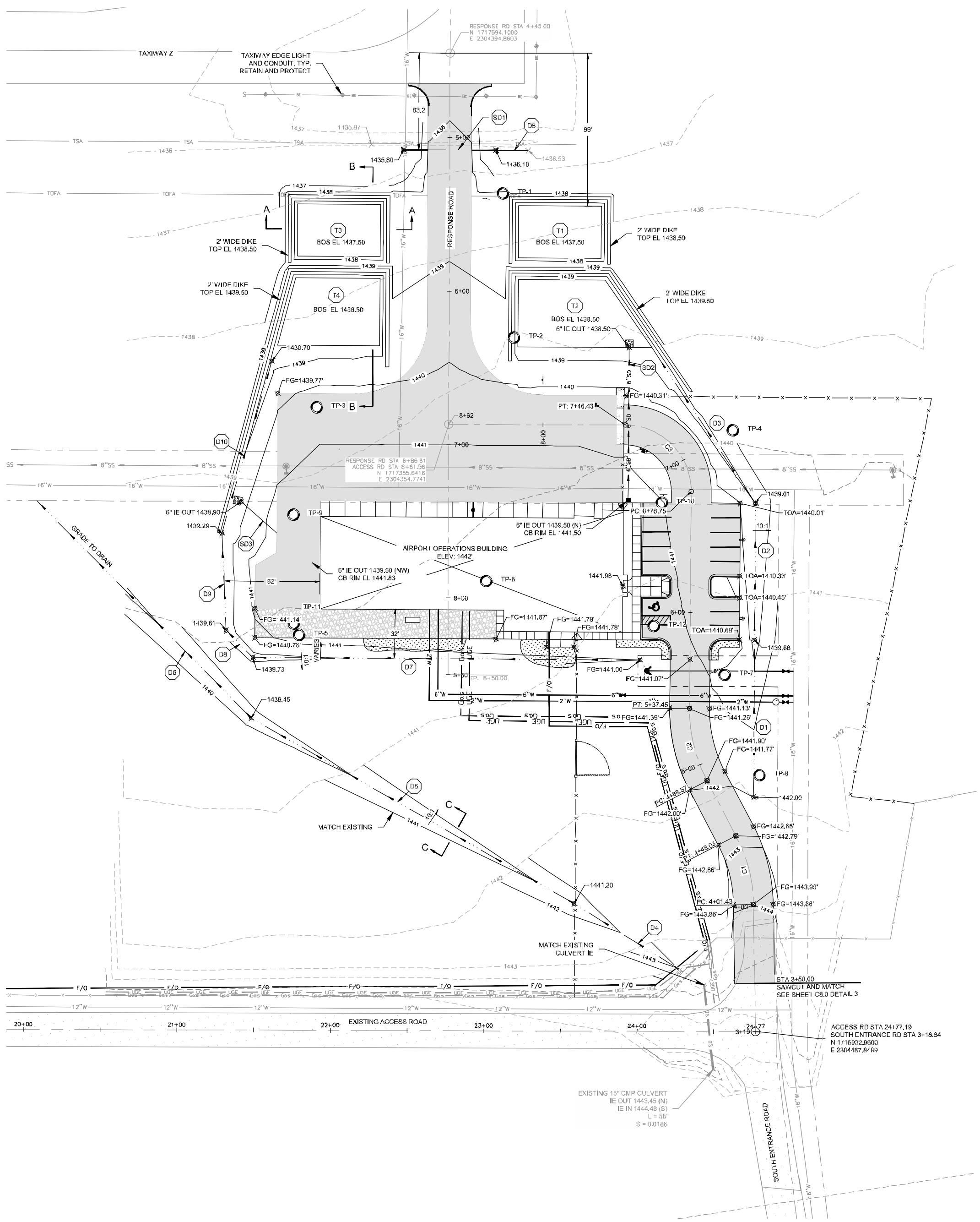
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

SITE UTILITY PLAN

DATE: JULY 2017
PROJECT: 16017

SHEET C4.0 OF 10



LEGEND

	EXISTING	PROPOSED
PAVEMENT		
MAJOR CONTOUR	1440	1440
MINOR CONTOUR	1439	1439
SPOT ELEVATION	1442.00	1442.00
CULVERT	SD	
DITCH		
CATCH BASIN		
BOTTOM OF SWALE		BOS
RIP RAP PAD ENERGY DISSIPATER		
TEST PIT LOCATIONS 1-8 (SEE GEOTECHNICAL REPORT DATED 8/4/16	TP-1	
TEST PIT LOCATIONS 9-17 (SEE GEOTECHNICAL REPORT ADDENDUM DATED 7-3-17	TP-10	

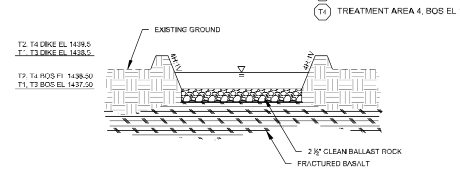
CURVE TABLE				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
C1	100.00	46.61	23.73	26°42'12"
C2	100.00	48.88	24.94	28°00'28"
C3	43.00	67.68	43.14	90°11'10"

0 15 30 60 90
FEET

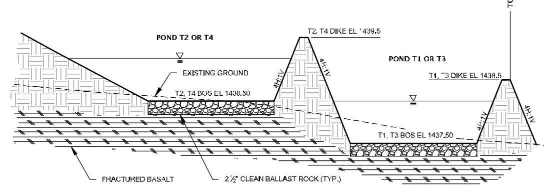
NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING THE NECESSARY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS, FILING ANY NOTICE OF INTENT (NOI) PERMITS, AND PREPARING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA). CONTACT THE EPA FOR REQUIRED INFORMATION. SAID PERMITS SHALL BE FILED TO THE ENGINEER AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION.

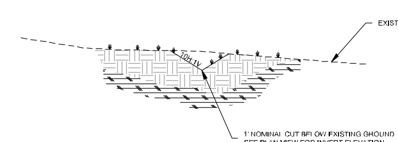
- SD1 12" X 60' CULVERT, DUCTILE IRON CLASS 50, AT 0.50% SLOPE IE OUT 1435.8 (W), IE IN 1436.1 (E)
- SD2 6" X 100' STORM DRAIN, DUCTILE IRON CLASS 50, AT 1.00% SLOPE IE OUT 1438.50
- SD3 6" X 60' STORM DRAIN, DUCTILE IRON CLASS 50, AT 1.00% SLOPE IE OUT 1438.90
- D1 V-DITCH, 102 LF AT 2.27% SLOPE
- D2 V-DITCH, 90 LF AT 0.75% SLOPE
- D3 V-DITCH, 122 LF AT 0.42% SLOPE
- D4 V-DITCH, 100 LF AT 2.25% SLOPE
- D5 V-DITCH, 243 LF AT .72% SLOPE
- D6 V-DITCH, GRADE TO DRAIN, 0.2% MINIMUM SLOPE
- D7 V-DITCH, 252 LF AT .50% SLOPE
- D8 V-DITCH, 25 LF AT .50% SLOPE
- D9 V-DITCH, 63 LF AT .50% SLOPE
- D10 V-DITCH, 117 LF AT 0.50% SLOPE
- T1 TREATMENT AREA 1, BOS EL 1437.50, BOS AREA 1836 SQ. FT.
- T2 TREATMENT AREA 2, BOS EL 1438.50, BOS AREA 3165 SQ. FT.
- T3 TREATMENT AREA 3, BOS EL 1437.50, BOS AREA 1836 SQ. FT.
- T4 TREATMENT AREA 4, BOS EL 1438.50, BOS AREA 2671 SQ. FT.



SECTION A - INFILTRATION BASIN - LOOKING NORTH
NTS



SECTION B - INFILTRATION BASIN - LOOKING WEST
NTS



SECTION C - GRASS CHANNEL (V-DITCH)
NTS

REVIEWED FOR CODE COMPLIANCE

PROFESSIONAL ENGINEER REGISTERED 8351 STATE OF IDAHO CHRISTOPHER H MANSFIELD 7/13/2017

E-FILE NAME	160170-C-4-GRD-DR
DESIGNED	CHM
DRAWN	NTJ
CHECKED	-
APPROVED	-

REVISIONS

NO.	DATE	REVISIONS
1	7/7/17	ADDED TEST PIT INFO
2	7/14/17	BID SET RELEASE

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
MERIDIAN, IDAHO 83642-6703
PHONE: (208) 323-2288 FAX: (208) 323-2399
OFFICES ALSO IN: COEUR d'ALENE, IDAHO; NAMPA, IDAHO; SPOKANE, WA

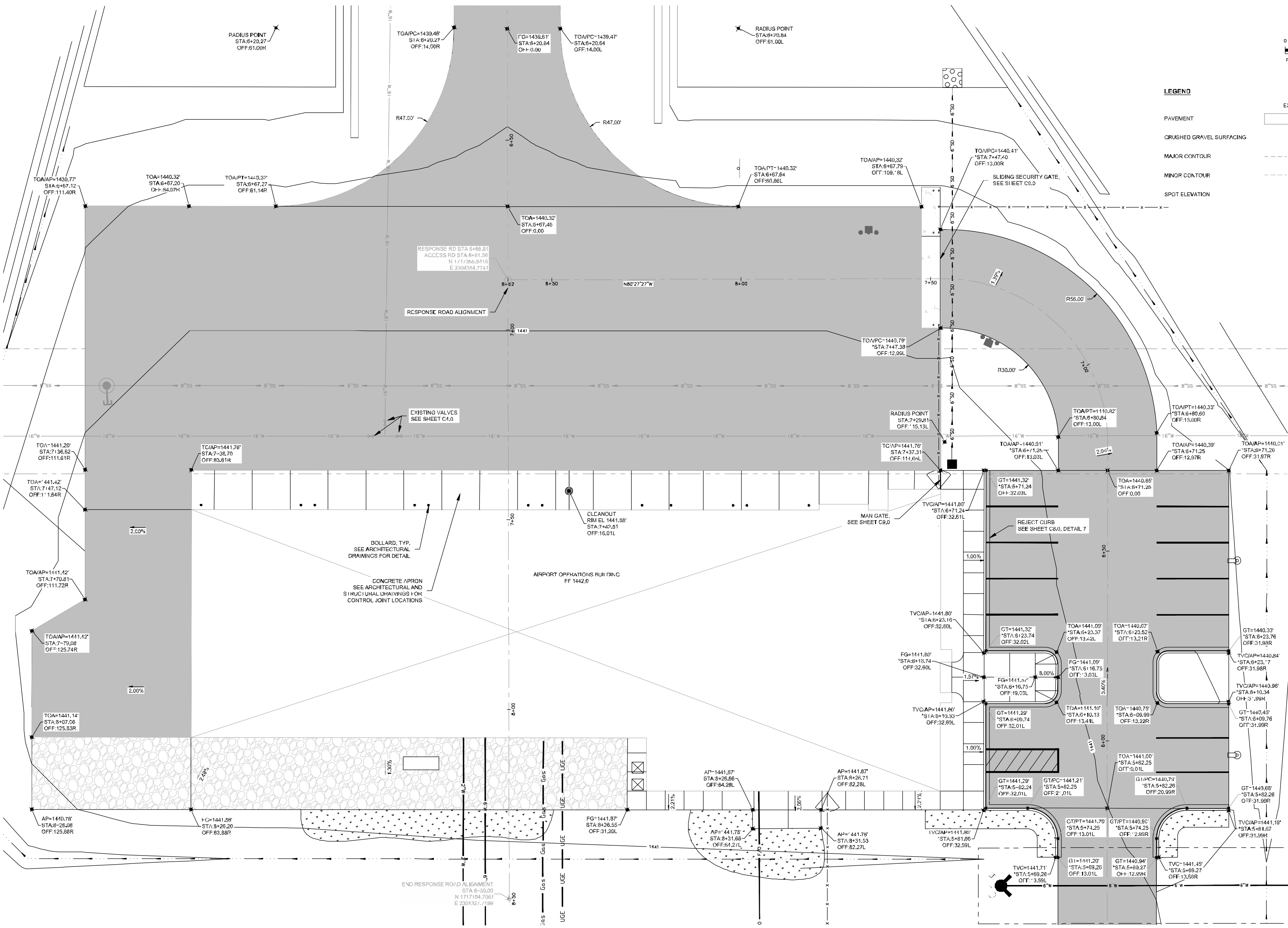
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

GRADING AND DRAINAGE PLAN

DATE: JUNE 2, 2017
PROJECT: 160170

SHEET C5.0 OF 10



LEGEND

	EXISTING	PROPOSED
PAVEMENT		
CRUSHED GRAVEL SURFACING		
MAJOR CONTOUR	1440	1440
MINOR CONTOUR	1439	1439
SPOT ELEVATION	1436.57	FG=1440.72' STA:8+10.58 OFF:178.82L

ABBREVIATIONS

TC	TOP OF CONCRETE
TVC	TOP OF VERTICAL CURB
FG	FINISH GRADE
FOC	TOP FACE OF CURB
EDG	EDGE OF CONCRETE
BOW	BACK OF WALK
TOA	TOP OF ASPHALT
INV	INVERT ELEVATION
RIM	RIM ELEVATION
M.E.	MATCH EXISTING
AP	ANGLE POINT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
GT	GUTTER

NOTE:

* STATIONS AND OFFSETS REFERENCE THE ACCESS ROAD ALIGNMENT. ALL OTHER STATIONS AND OFFSETS REFERENCE THE RESPONSE ROAD ALIGNMENT.

REVIEWED FOR CODE COMPLIANCE

PROFESSIONAL ENGINEER REGISTERED 8351 STATE OF IDAHO CHRISTOPHER H MANSFIELD 7/13/2017

E-FILE NAME	160170-C-6-PAVING PLAN
DESIGNED	CHM
DRAWN	NTJ
CHECKED	
APPROVED	
DATE	7/14/17

REVISIONS

NO.	
1	BID SET RELEASE

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
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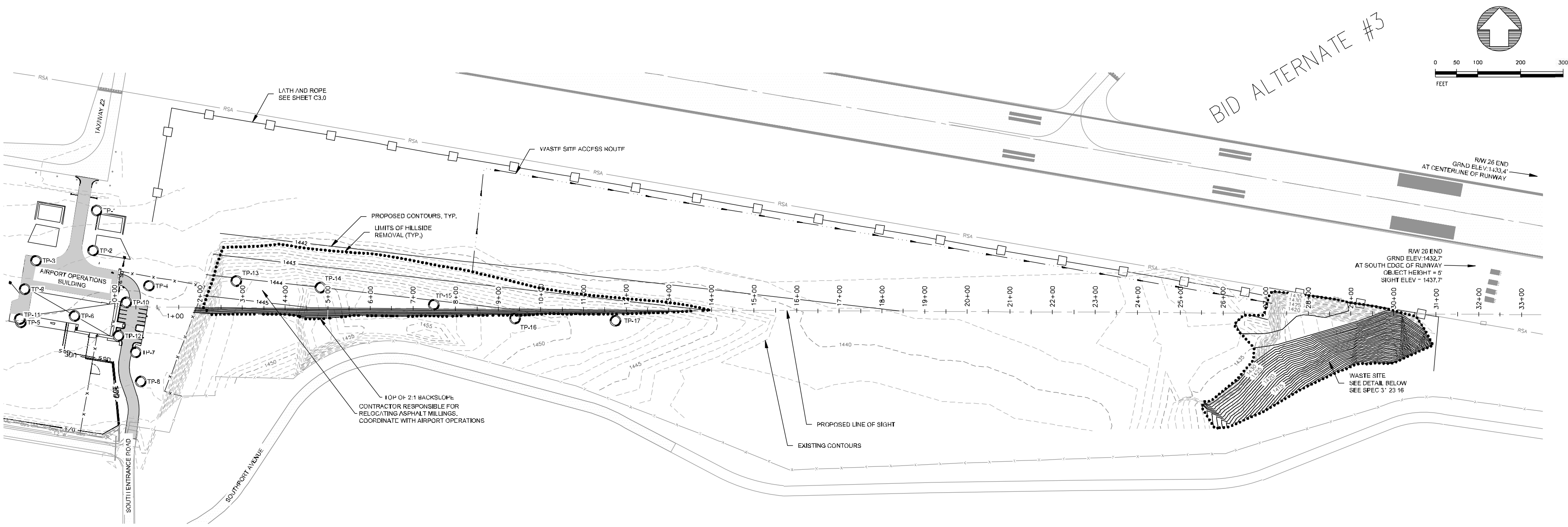
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

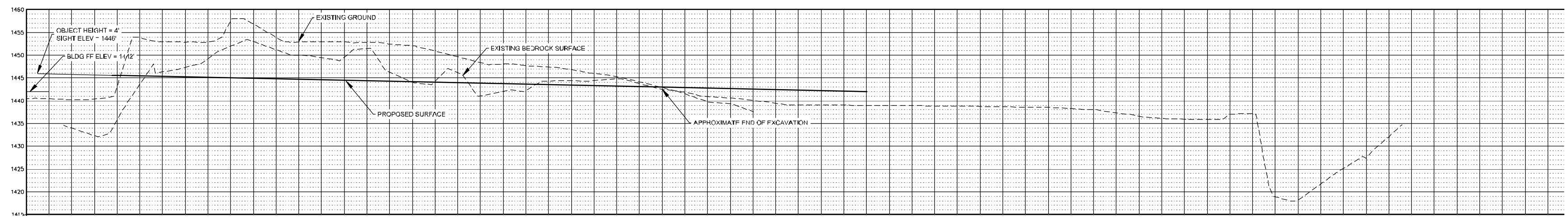
PAVING PLAN

DATE: JULY 2017
PROJECT: 160170

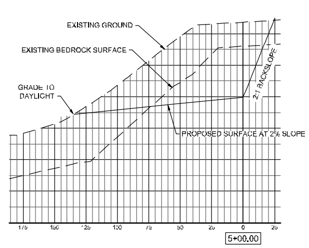
SHEET C6.0 OF 10



HILLSIDE REMOVAL PLAN

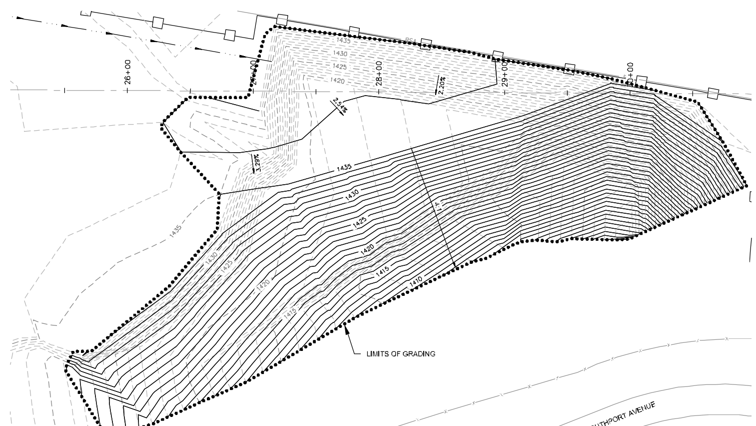


HILLSIDE REMOVAL PROFILE



TYPICAL CROSS SECTION - LOOKING EAST

REVIEWED FOR CODE COMPLIANCE



WASTE SITE DETAIL

LEGEND

	EXISTING	PROPOSED
PAVEMENT		
MAJOR CONTOUR	1440	1440
MINOR CONTOUR	1439	1439
TEST PIT LOCATIONS 1-8 (SEE GEOTECHNICAL REPORT DATED 8/4/16)		TP-2
TEST PIT LOCATIONS 9-17 (SEE GEOTECHNICAL REPORT ADDENDUM DATED 7/3/17)		TP-17
FENCE	—x—x—x—	—x—x—x—

QUANTITIES

COMMON EXCAVATION	16,000 CY ±
ROCK EXCAVATION	6,000 CY ±
TOTAL	22,000 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 WHICH 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) 342-1585 PRIOR TO ANY EXCAVATION. CALL BILL SETH WITH THE FAA AT (509) 742-2601.
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 023200. 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 92 00.

PROFESSIONAL ENGINEER REGISTERED 8351 STATE OF IDAHO CHRISTOPHER H MANSFIELD 8/2/2017

E-FILE NAME	160170-C-07-HILL
DESIGNED	CHM
DRAWN	NTJ
CHECKED	—
APPROVED	—

NO.	REVISIONS	DATE
1	BID SET RELEASE	7/14/17
2	REVISED PROPOSED CONTOURS AND WASTE SITE ACCESS, GRADING AND DETAIL	8/2/17

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
MERIDIAN, IDAHO 83642-6703
PHONE: (208) 323-2288 FAX: (208) 323-2399
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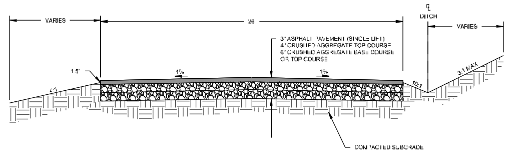
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

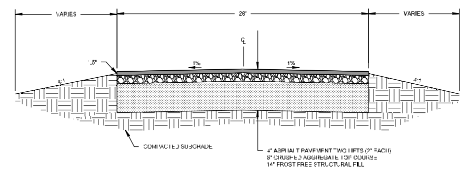
HILLSIDE REMOVAL BID ALTERNATE #3

DATE: JULY 2017
PROJECT: 160170

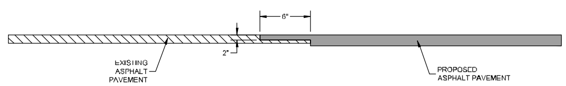
SHEET C7.0 OF 10



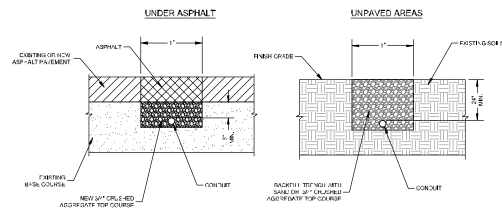
TYPICAL SECTION - PUBLIC ACCESS ROAD / SOUTH ENTRANCE ROAD / PARKING LOT — N.T.S. 1/C8.0



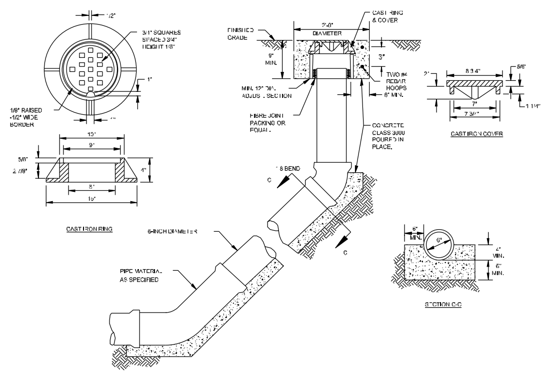
TYPICAL SECTION - RESPONSE ROAD — N.T.S. 2/C8.0



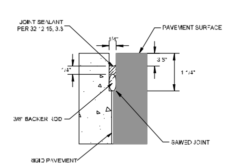
LAP JOINT PAVING DETAIL — N.T.S. 3/C8.0



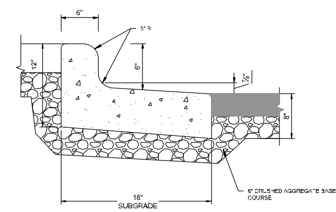
CONDUIT TRENCH DETAIL — N.T.S. 4/C8.0



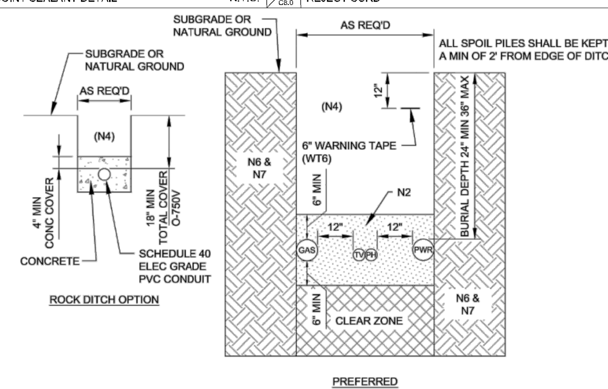
CLEANOUT — N.T.S. 5/C8.0



RIGID TO FLEXIBLE PAVEMENT JOINT SEALANT DETAIL — N.T.S. 6/C8.0



REJECT CURB — N.T.S. 7/C8.0



NOTES

1. GAS SERVICE PIPE AND ELECTRIC CONDUIT SHOULD NOT BE RUN IN THE WATER DITCH. AVISTA REQUIRES 5' SEPARATION BETWEEN WATER MAINS AND ELECTRIC CABLE.
2. BEDDING AND PADDING FOR SERVICES IN CONDUIT SHALL BE CLASSIFIED AS SELECT BACK FILL. SELECT BACKFILL IS CLEAN, SCREENED MATERIAL CONSISTING OF ¾" MINUS ROCK AND SAND FREE OF RUBBISH, CINDERS, CHEMICAL REFUSE OR OTHER MATERIALS THAT COULD CAUSE DAMAGE TO THE CONDUIT.
3. ALL CUSTOMER DITCHES 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 URD 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 PIPELINES OR STORM DRAINS OR AT FURTHER DISTANCES AS SPECIFIED BY THE APPROPRIATE REGULATING AGENCY.

REVIEWED FOR CODE COMPLIANCE

SERVICE DITCH — N.T.S. 8/C8.0

T-O ENGINEERS
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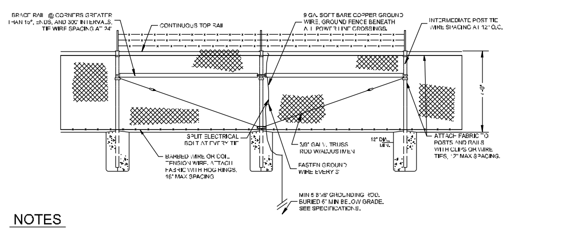
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

PAVING, GRADING, AND DRAINAGE DETAILS

DATE: JULY 2017
PROJECT: 160170

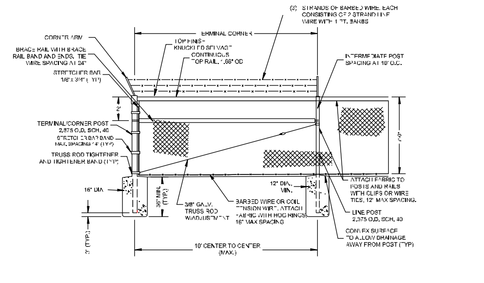
SHEET C8.0 OF 10



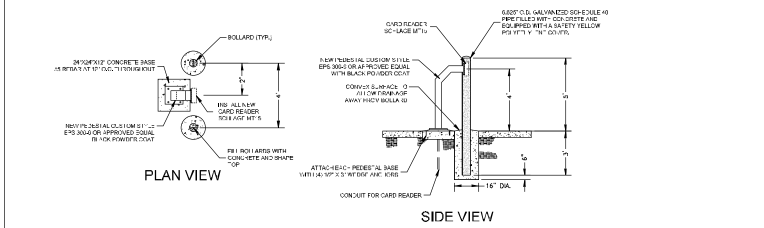
NOTES

1. AN INLINE BRACE AND TERMINAL POST SHALL BE LOCATED ON STRAIGHT SECTIONS OF FENCE AT 300-FOOT INTERVALS OR LESS. BRACES AND TERMINAL POSTS SHALL BE INSTALLED AT ALL FENCE CORNERS. FENCE CORNERS ARE DEFINED AS HAVING 15° OR MORE CHANGE IN FENCE DIRECTION.

CHAIN LINK FENCE DETAIL — N.T.S. 1/C9.0



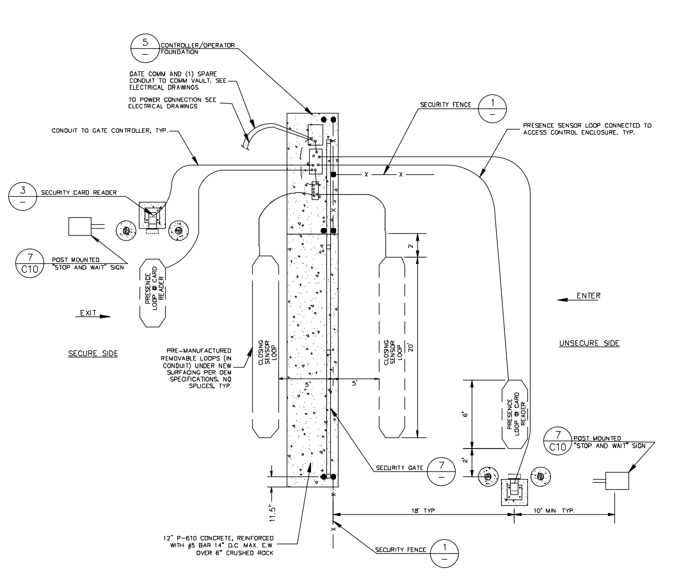
CORNER CHAIN LINK BRACE PANEL DETAIL — N.T.S. 2/C9.0



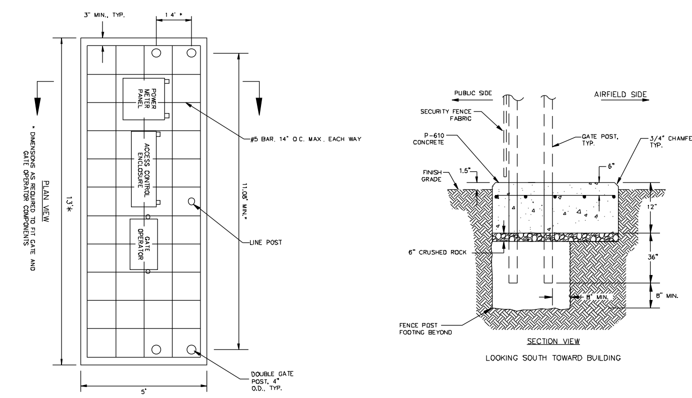
NOTES

1. FOUR HAND TRANSMITTER REMOTE CONTROLLERS SHALL BE SUPPLIED WITH EACH ELECTRIC GATE INSTALLATION. THE HAND TRANSMITTERS SHALL BE ALLSTAR MODEL 878681, OR APPROVED EQUAL.

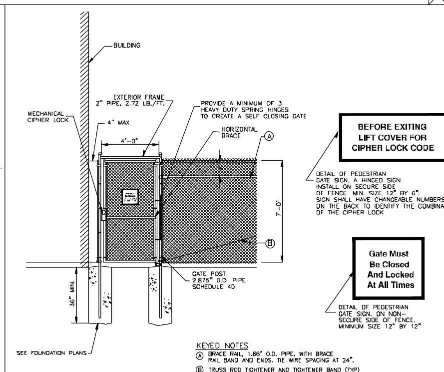
PEDESTAL AND CARD READER DETAIL — N.T.S. 3/C9.0



SECURITY GATE PLAN — N.T.S. 4/C9.0



GATE CONTROLLER/OPERATOR FOUNDATION — N.T.S. 5/C9.0

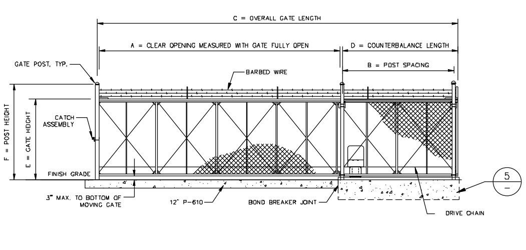


MAN GATE WITH CARD READER — N.T.S. 6/C9.0

CRITICAL DIMENSION CHART			
MARK	DESCRIPTION	FORMULA	DESIGN
A	CLEAR OPENING	A	24'
B	COUNTERBALANCE POST SPACING C/C	(A/2)-11"	11.08'
C	OVERALL GATE LENGTH	A x 1.5	36'
D	COUNTERBALANCE LENGTH	A x 0.5	12'
E	NOMINAL GATE HEIGHT	E	7'
F	POST HEIGHT (W BARB ARMS)	E+1'-6"	8.5'

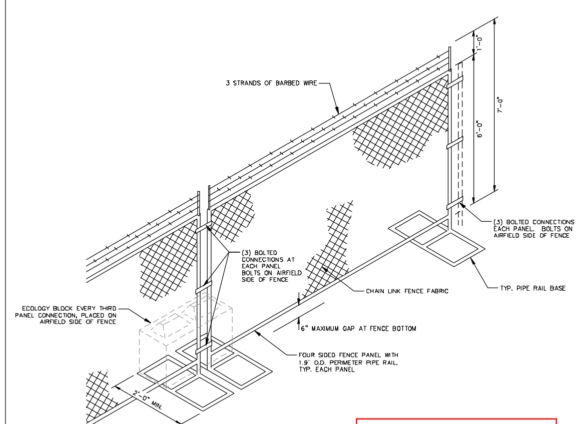
NOTES:

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/C9.0

NOT USED — N.T.S. 8/C9.0



TEMPORARY SECURITY FENCE — N.T.S. 9/C9.0

T-O ENGINEERS
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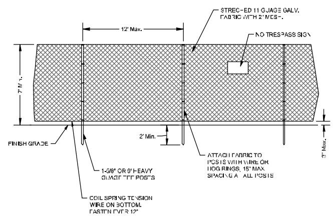
LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

FENCING AND GATE LAYOUT

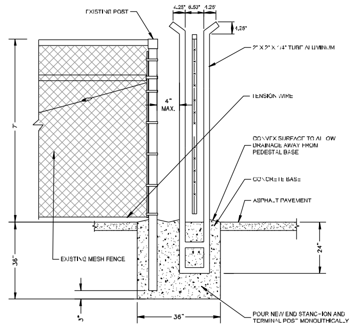
DATE: JULY 2017
PROJECT: 160170
SHEET C9.0 OF 10



NOTES

1. CONTRACTOR WILL BE RESPONSIBLE FOR UTILITY LOCATIONS PRIOR TO ANY EXCAVATION FOR FENCE INSTALLATIONS. UTILITY LOCATIONS AND REQUIRED "POTHOLING" WILL BE THE CONTRACTORS RESPONSIBILITY AND WILL BE INCIDENTAL TO FENCE INSTALLATION ITEMS.
2. THE FENCE FABRIC SHALL BE STRETCHED SMOOTH IN APPEARANCE.
3. POSTS SHALL BE SPACED NOT MORE THAN 10-FEET APART AND SHALL BE SET IN A MINIMUM OF 2' DEPTH
4. CONTRACTOR SHALL MAINTAIN FENCE TO THE SATISFACTION OF THE ENGINEER.

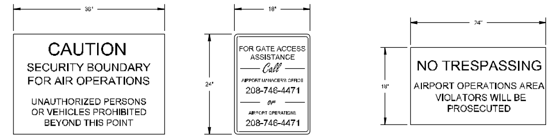
CONSTRUCTION FENCE- DRIVEN POST N.T.S. 1/C10.0



NOTES

1. CONTRACTOR SHALL MATCH ALL EXISTING FENCE LAYOUT AND ATTACHMENT LOCATIONS TO NEW STANCHIONS INSTALLED.
2. ALL ATTACHMENT MATERIALS, LABOR AND EQUIPMENT SHALL BE CONSIDERED INCIDENTAL TO THE STANCHION INSTALLATION.
3. ALL REPAIR OR REPLACE STANCHION WORK AREAS SHALL BE SECURED AT ALL TIMES AND BE APPROVED BY AIRPORT SECURITY.

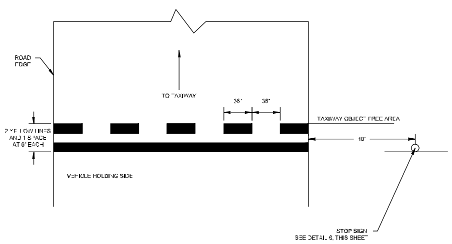
END STANCHION DETAIL N.T.S. 2/C10.0



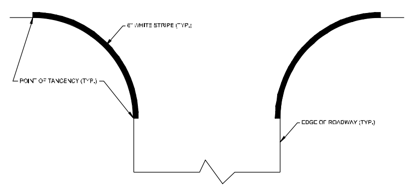
NOTES

1. SIGNS SHOWN IN DETAIL ARE FOR GENERAL REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SIGN SIZES, COLORS AND FONT SIZES FOR PROPOSED GATE SIGNS. CONTRACTOR SHALL SUBMIT SIGN PROPOSALS FOR EACH INDIVIDUAL SIGN TO ENGINEER FOR APPROVAL PRIOR TO ORDERING SIGN.

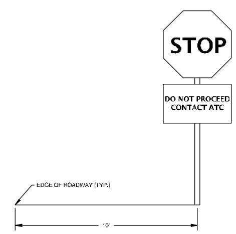
GATE AND FENCE SIGN DETAILS N.T.S. 3/C10.0



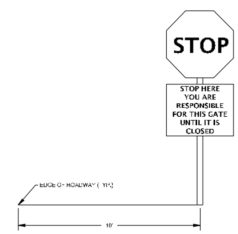
NON-MOVEMENT AREA MARKING AND STOP SIGN DETAIL N.T.S. 4/C10.0



ROADWAY EDGE MARKING N.T.S. 5/C10.0



NON-MOVEMENT AREA STOP SIGN DETAIL N.T.S. 6/C10.0



SECURITY GATE STOP SIGN DETAIL N.T.S. 7/C10.0

REVIEWED FOR CODE COMPLIANCE

T-O ENGINEERS
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
2471 S. TITANIUM PLACE
MERIDIAN, IDAHO 83642-6703

LEWISTON NEZ-PERCE COUNTY REGIONAL AIRPORT (LWS)

AIRPORT OPERATIONS BUILDING

FENCING GATE AND STRIPING DETAILS

DATE: JULY 2017

SHEET C10.0 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 (ISPWC), 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 ISPWC 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 ISPWC 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

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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 (ISPWC), 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

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