MANCHESTER-BOSTON REGIONAL AIRPORT

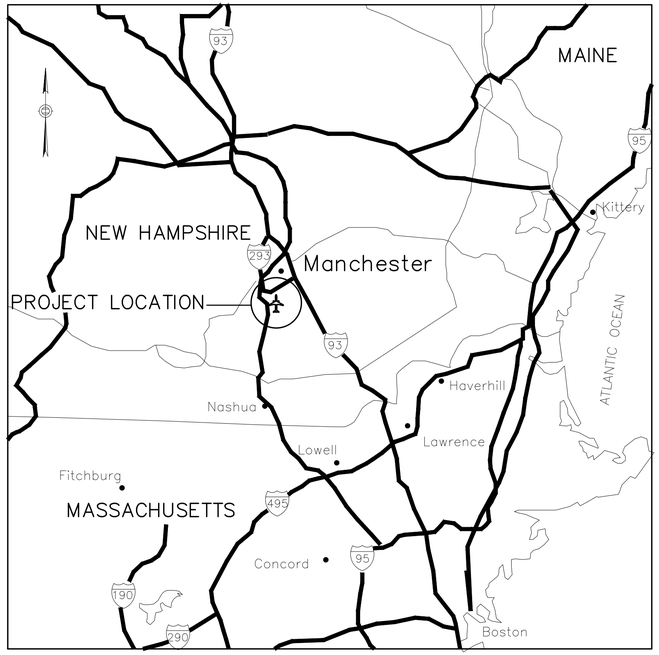
MANCHESTER, NEW HAMPSHIRE

CONSTRUCT NEW GREEN DRIVE CARGO FACILITY APRON AND ACCESS ROAD

FAA A.I.P. 3-33-0011-XXX-2022
CITY BID #FY22-805-48
MJ PROJECT NO. 18700.08

CITY OF MANCHESTER - DEPARTMENT OF AVIATION

1 AIRPORT ROAD, SUITE 300
MANCHESTER, NEW HAMPSHIRE
(603) 624-6539
WWW.FLYMANCHESTER.COM



McFarland Johnson

BRIAN M. BENNETT
53 REGIONAL DRIVE, CONCORD, NH 03301
PH: 603-225-2978 FAX: 603-225-0095

PROJECT DESIGNER

Sealed	BRIAN M. BENNETT
PE No.	7416
Date	XXXX

THE STATE OF NEW HAMPSHIRE BRIAN M. BENNETT No. 7416 LICENSED PROFESSIONAL ENGINEER

PLANS BEST VIEWED IN COLOR

BID DOCUMENTS

MARCH 2022

EXISTING LEGEND

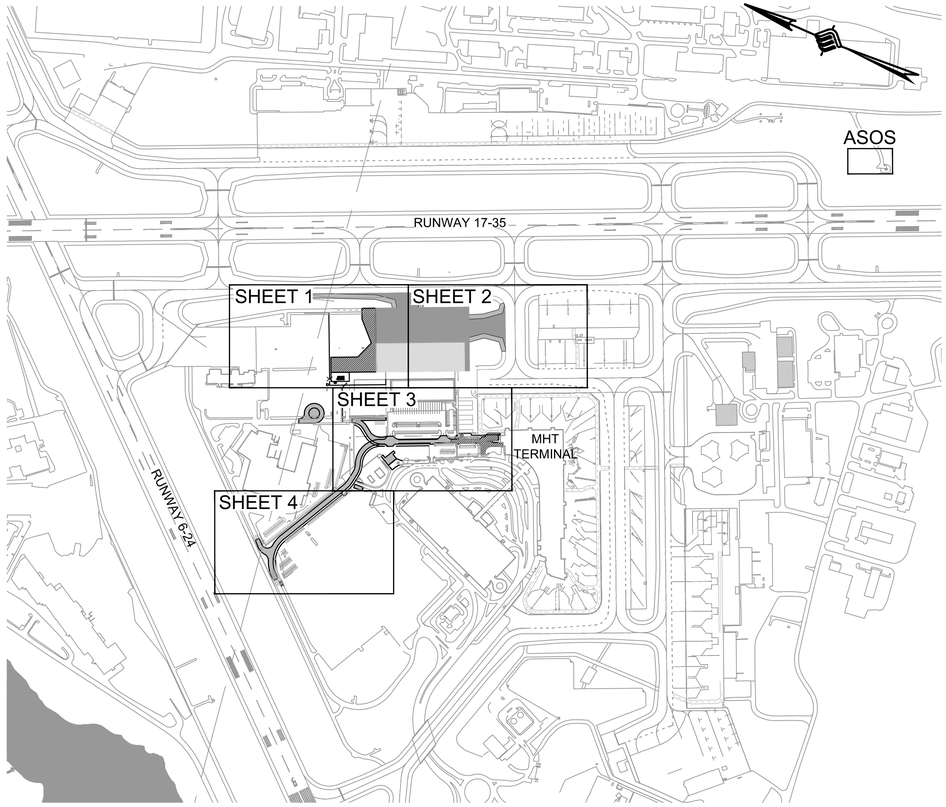
- DRAIN PIPE
- UNDERDRAIN
- WATER PIPE
- UNDERGROUND ELECTRIC
- DUCT BANK
- FAA ELECTRIC
- OVERHEAD ELECTRIC
- TELECOM
- GAS LINE
- SEWER LINE
- FENCE
- ELEVATED TAXIWAY EDGE LIGHT
- IN-PAVEMENT TAXIWAY CENTERLINE LIGHT
- ELECTRIC MANHOLE
- ELECTRIC HANDHOLE
- UNIDENTIFIED MANHOLE
- CATCH BASIN
- DRAIN MANHOLE
- UNDERDRAIN CLEANOUT
- SEWER MANHOLE
- JERSEY BARRIER
- AIRFIELD GUIDANCE SIGN
- POLE MOUNTED SIGN
- EDGE OF PAVEMENT
- TAXIWAY MARKING
- LIGHT POLE FED FROM UNDERGROUND CABLE
- LIGHT POLE/UTILITY POLE WITH OVERHEAD CABLE
- WATER VALVE
- WATER SHUTOFF
- MAJOR CONTOUR
- MINOR CONTOUR
- CORE / BORING LOCATION
- UTILITY LINE CAP
- BOLLARD

PROPOSED LEGEND

- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE PAVEMENT
- GRASSED AREA
- SAW AND SEAL JOINT
- TAXIWAY SAFETY AREA
- TAXIWAY / TAXILANE OBJECT FREE AREA
- MAJOR CONTOUR
- MINOR CONTOUR
- LIMIT OF DISTURBANCE
- EROSION CONTROL SEDIMENT BARRIER
- INLET PROTECTION FILTER BAG
- CATCH BASIN
- DRAIN MANHOLE
- ADJUST STRUCTURE RIM ELEVATION
- DRAIN PIPE
- GAS PIPE
- WATER PIPE
- NO. 8 5kV L-824 CABLE AND CONDUIT
- GUIDANCE SIGN
- ELEVATED TAXIWAY EDGE LIGHT
- REMOVE, STORE & REINSTALL EDGE LIGHT
- AIRCRAFT RATED ELECTRIC MANHOLE

SHEET LIST TABLE

SHEET LIST TABLE



KEY PLAN
1" = 500'

0 500 1000 1500 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095
DESIGNED BY DPB
DRAWN BY RHL
CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

INDEX SHEET

SCALE: 1" = 500'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

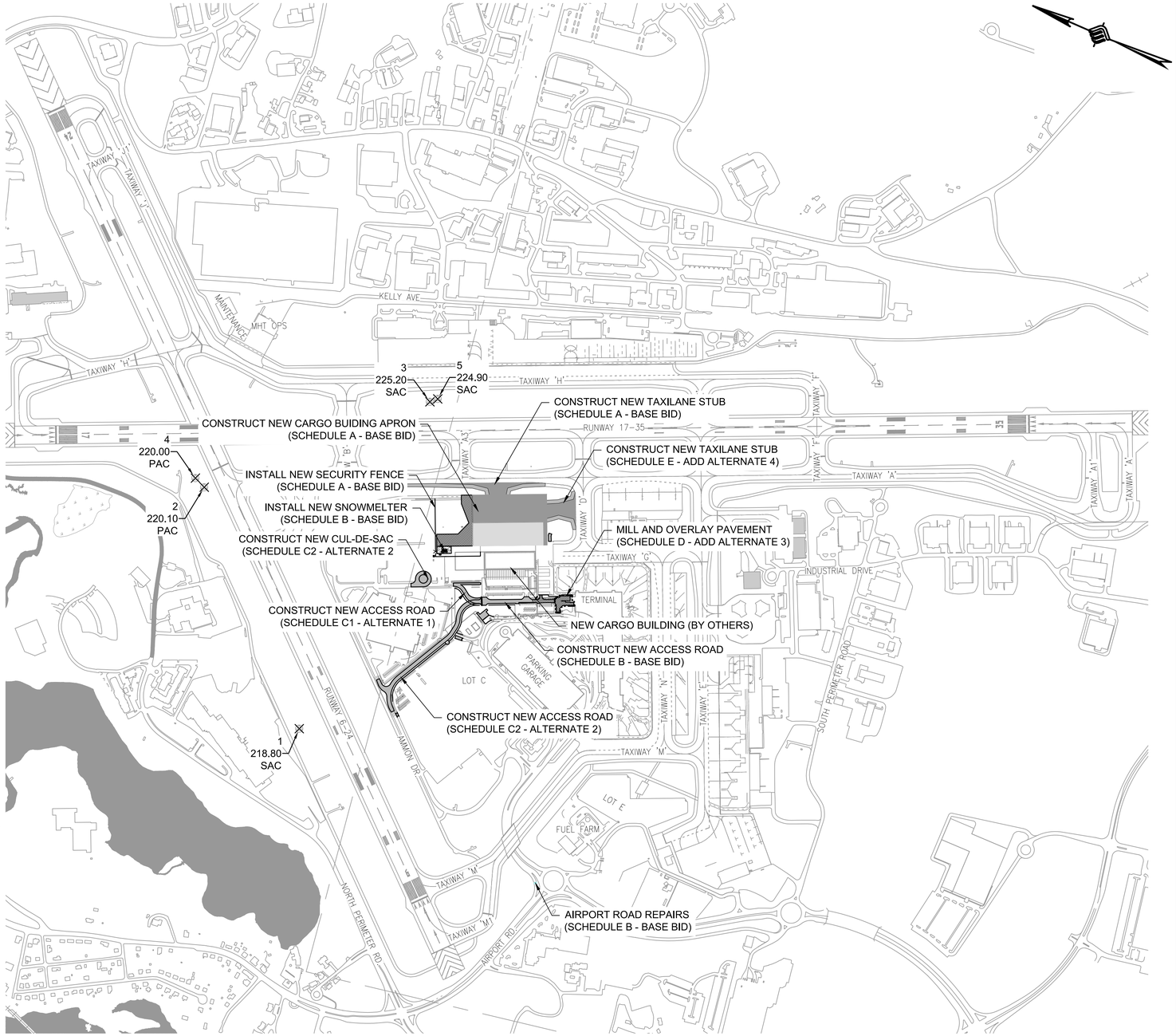
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
IN-01

SHEET 2 OF 90
REV

GENERAL NOTES:

1. THE PROJECT IS SPLIT INTO DIFFERENT SCHEDULES AS DESCRIBED BELOW. NOT ALL PROPOSED ITEMS ARE CONSIDERED ELIGIBLE FOR FAA FUNDING. ALSO, THE PROJECT INCLUDES ALTERNATE AND ADD ALTERNATE OPTIONS THAT MAY OR MAY NOT BE AWARDED.
   - 1.1. SCHEDULE A INCLUDES THE BASE BID PORTION OF THE PROJECT THAT IS CONSIDERED ELIGIBLE FOR FAA FUNDING.
   - 1.2. SCHEDULE B INCLUDES THE BASE BID PORTION OF THE PROJECT THAT IS NOT CONSIDERED ELIGIBLE FOR FAA FUNDING.
   - 1.3. SCHEDULE C1 INCLUDES ALTERNATE 1 AND SCHEDULE C2 INCLUDES ALTERNATE 2. THESE SCHEDULES ARE ALTERNATES TO EACH OTHER, MEANING ONLY ONE WILL BE AWARDED, NOT BOTH.
   - 1.4. SCHEDULE D INCLUDES THE ADD ALTERNATE OPTION TO MILL AND PAVE THE TERMINAL LOADING DOCK AREA.
   - 1.5. SCHEDULE E INCLUDES THE ADD ALTERNATE OPTION TO CONSTRUCT THE TAXILANE CONNECTION FROM THE CARGO APRON TO TAXIWAY D.
2. THE CONTRACTOR SHALL CONDUCT THEIR OPERATION SO AS TO AFFORD COMPLETE UNRESTRICTED ACCESS BY EMERGENCY PERSONNEL AND EQUIPMENT.
3. THE CONTRACTOR SHALL SUBMIT TO THE RESIDENT PROJECT REPRESENTATIVE (RPR) A PROPOSED WORK SCHEDULE FOR THE SUBSEQUENT 2-WEEK PERIOD A MINIMUM OF 48 HOURS PRIOR TO THE SCHEDULED PROJECT PROGRESS MEETING. THE SCHEDULE SHALL INCLUDE IDENTIFICATION OF WORK TASKS AND SKETCHES OF PROPOSED PAVEMENT CLOSURES, PROPOSED HAUL ROUTES AND PROPOSED LOCATION OF ALL SAFETY BARRICADES. THE LOOK AHEAD SCHEDULE SHALL BE REVIEWED AND APPROVED BY THE RPR AND MHT OPERATIONS. WORK NOT SHOWN ON THE APPROVED TWO (2) WEEK LOOK AHEAD SCHEDULE MAY BE DENIED FOR REASON OF INADEQUATE TIME TO COORDINATE WITH AIRPORT TENANTS AND AIRPORT USERS.
4. THE CONTRACTOR SHALL NOT BEGIN WORK IN ANY AREA UNTIL MHT OPERATIONS HAS APPROVED THE TEMPORARY MARKINGS AND SAFETY BARRICADES LAYOUT, AND CONFIRMED THAT TEMPORARY MARKINGS AND SAFETY BARRICADES HAVE BEEN PROPERLY PLACED. THE CONTRACTOR SHALL NOT ENTER THE WORK AREA TO COMMENCE OPERATIONS UNTIL OBTAINING APPROVAL FROM MHT OPERATIONS.
5. ALL VEHICLES ENTERING AND EXITING THE CONSTRUCTION WORK AREA SHALL BE CLEANED AND CLEAR FROM FOREIGN OBJECT DEBRIS (FOD). THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND OPERATE ONE VACUUM SWEEPER TRUCK WITH A DEDICATED OPERATOR ON A FULL-TIME BASIS FOR THE DURATION OF THE PROJECT AND SHALL UTILIZE IT TO REMOVE PROJECT DEBRIS FROM THE ACCESS ROUTE AND WORK AREA AS DIRECTED BY THE RPR OR MHT OPERATIONS.
6. AT THE COMPLETION OF EACH WORK DAY, THE CONTRACTOR SHALL INSPECT THE WORK SITE IN THE PRESENCE OF THE RPR AND MHT OPERATIONS TO VERIFY THAT ALL SAFETY BARRICADES AND SAFETY LIGHTS ARE IN PLACE AND IN PROPER WORKING ORDER. ACCESS ROUTES AND ALL APRON PAVEMENTS ADJACENT TO THE WORK AREA SHALL BE INSPECTED FOR FOD. ALL DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO LEAVING THE WORK SITE FOR THE DAY. IN ADDITION, PRIOR TO THE COMPLETION OF EACH WORK DAY THE ELECTRICAL SUBCONTRACTOR SHALL BE PRESENT TO VERIFY THAT ALL THE ELECTRICAL SERVICES AND NAVAIDS ARE FULLY OPERATIONAL.
7. THE CONTRACTOR'S ATTENTION IS CALLED TO THE SUPPLEMENTAL PROVISIONS, CONSTRUCTION SAFETY AND PHASING PLAN, AND SPECIAL WORK REQUIREMENTS OF THE CONTRACT DOCUMENTS WITH REGARD TO ANY "SPECIAL PROVISIONS" WHICH MAY BE SPECIFIC TO THE SAFETY AND PHASING OF THIS PROJECT.
8. NORMAL AIRCRAFT OPERATIONS WILL BE CONDUCTED ON THE AIRPORT DURING CONSTRUCTION. THE PROJECT PHASING HAS BEEN DESIGNED TO MINIMIZE INTERFERENCE WITH DAILY AIRPORT OPERATIONS. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS FOR THE SAFETY OF OPERATING AIRCRAFT AS WELL AS CONTRACTOR EQUIPMENT AND PERSONNEL. MINOR MODIFICATIONS AND/OR CHANGES TO THE CONSTRUCTION SAFETY AND PHASING PLAN MAY BE ALLOWED BUT ONLY IF IT MINIMIZES IMPACT TO AIRPORT OPERATIONS AND WILL BENEFIT MHT OPERATIONS. ALL SUCH CHANGES SHALL BE AT NO ADDITIONAL EXPENSE TO THE CITY OF MANCHESTER - DEPARTMENT OF AVIATION, AND SHALL BE APPROVED BY THE RPR, MHT OPERATIONS, AND FAA PRIOR TO ANY IMPLEMENTATION. ALL CHANGES SHALL BE DOCUMENTED.
9. NO CONSTRUCTION OPERATIONS SHALL BE PERFORMED WITHIN 129.5 FEET OF THE CENTERLINE OF ANY ACTIVE TAXIWAY, WITHIN 250 FEET OF THE CENTERLINE OF ANY ACTIVE RUNWAY OR WITHIN THE LIMITS OF ACTIVE RUNWAY APPROACH ZONES UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM MHT OPERATIONS. WHEN PERMISSION HAS BEEN GRANTED TO WORK INSIDE THESE LIMITS, NO EQUIPMENT SHALL BE LEFT WITHIN THE LIMITS WHEN NOT ACTUALLY WORKING. ALL BOOMS SHALL BE LOWERED WHEN THE EQUIPMENT IS NOT IN OPERATION. CONTRACTOR'S EQUIPMENT MAINTENANCE REQUIRING OPEN FLAME, WELDING, SPARKS OR BURNING, SHALL NOT BE PERFORMED WITHIN 150 FEET OF AIRCRAFT. ALL HOT WORK SHALL REQUIRE A PERMIT FROM THE MANCHESTER FIRE DEPARTMENT.
10. THE CONTRACTOR SHALL FOLLOW MANCHESTER AIRPORT OPERATIONS CONSTRUCTION TRAFFIC REQUIREMENTS AS THEY PERTAIN TO THE OPERATIONS AND ROUTES TO BE TAKEN BY EQUIPMENT TRAVELING ON AIRPORT PROPERTY. ANY SIGNS, LIGHTS, SIGNALS, MARKINGS, OR TRAFFIC CONTROL DEVICES TO ALLOW PERSONNEL AND EQUIPMENT TO SAFELY ACCESS/EGRESS THE WORK SITE SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE WORK AT NO ADDITIONAL COST TO THE CITY OF MANCHESTER, UNLESS SPECIFICALLY NOTED AS ELIGIBLE FOR PAYMENT. NO AIRCRAFT PAVEMENT OR NAVIGATION AID CURRENTLY IN SERVICE SHALL BE LEFT OUT OF SERVICE OVERNIGHT UNLESS PREVIOUSLY SCHEDULED AND APPROVED BY MHT OPERATIONS AND FAA REPRESENTATIVE, WHERE APPLICABLE.
11. PARKING OF PERSONAL VEHICLES INSIDE THE AOA WILL NOT BE PERMITTED. THE CONTRACTOR, AS A SUBSIDIARY OBLIGATION, SHALL PROVIDE TRANSPORTATION FOR HIS/HER EMPLOYEES TO AND FROM THE WORK AREA FROM A PUBLIC PARKING AREA OR DESIGNATED CONTRACTOR EMPLOYEE PARKING AREA.
12. ALL EXCAVATIONS SHALL BE BACKFILLED, THE PAVEMENT REPAIRED, PROPERLY CURED, MARKED AND APPROVED BY THE RPR AND MHT OPERATIONS PRIOR TO THE WORK AREA BEING REOPENED TO TRAFFIC.
13. ALL EXCAVATED STRUCTURES, PAVEMENTS, AND UNUSED CONSTRUCTION DEBRIS SHALL BE IMMEDIATELY REMOVED FROM THE AIRFIELD AND BE LEGALLY RECYCLED OR DISPOSED OF BY THE CONTRACTOR OFF AIRPORT PROPERTY, OR TEMPORARILY STORED IN THE DESIGNATED CONTRACTOR STAGING AND EQUIPMENT STORAGE AREA. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES REQUIRED FOR DISPOSAL OF CONSTRUCTION MATERIAL OFF THE AIRPORT. NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE FOR THE DISPOSAL, BUT RATHER THE DISPOSAL SHALL BE INCIDENTAL TO THE RESPECTIVE ITEM ASSOCIATED WITH THE MATERIAL.
14. LOCATION OF EXISTING UTILITIES AND INFRASTRUCTURE UNDERGROUND AND ABOVEGROUND ARE FROM SURVEY AND RECORD PLANS AND THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES IN THE PROJECT AREA. ALL EXISTING UTILITIES AND INFRASTRUCTURE IN THE VICINITY OF ANY EXCAVATION SHALL BE CLEARLY MARKED BY THE CONTRACTOR ON THE GROUND PRIOR TO BEGINNING EXCAVATION. THE CONTRACTOR SHALL NOTIFY THE FAA AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION NEAR FAA NAVAIDS OR THEIR ASSOCIATED CABLES.
15. THE CONTRACTOR SHALL REPAIR, AT THEIR OWN EXPENSE, ANY UNDERGROUND UTILITIES DAMAGED BY THEIR OPERATIONS AND THEIR SUBCONTRACTOR'S OPERATIONS. ALL REPAIRS SHALL REQUIRE THE RPR'S AND UTILITY OWNER'S REVIEW AND APPROVAL.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE BY EQUIPMENT TO EXISTING PAVEMENT. ANY DAMAGE THAT OCCURS SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AND RPR, AT NO COST TO THE OWNER.
17. THE CONTRACTOR SHALL PERFORM DUST CONTROL THROUGHOUT THE PROJECT DURATION AS NECESSARY. NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE FOR DUST CONTROL. DUST CONTROL SHALL BE INCIDENTAL TO THE VARIOUS ITEMS ASSOCIATED WITH DUST GENERATION. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THEIR OWN WATER SOURCE.
18. ALL ENVIRONMENTAL EROSION CONTROL DEVICES SHALL BE INSTALLED AND APPROVED BY THE RPR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



0 500 1000 1500 FT
SCALE

NGS MONUMENT DATA

POINT #	NAME	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	MHT D	SAC	218.80	157966.57	1043744.56
2	MHT C	PAC	220.10	159471.18	1045276.37
3	MHT E	SAC	225.20	158027.88	1046656.57
4	MHT F	PAC	220.00	159567.87	1045317.07
5	MHT G	SAC	224.90	157977.45	1046703.80

DATA: NGS 2016. NAD 83 (2011) AND NAVD 88

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BOYNTON
No. 7410
LICENSED PROFESSIONAL ENGINEER

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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GENERAL PLAN AND NOTES

SCALE: 1" = 500' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
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AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GP-01

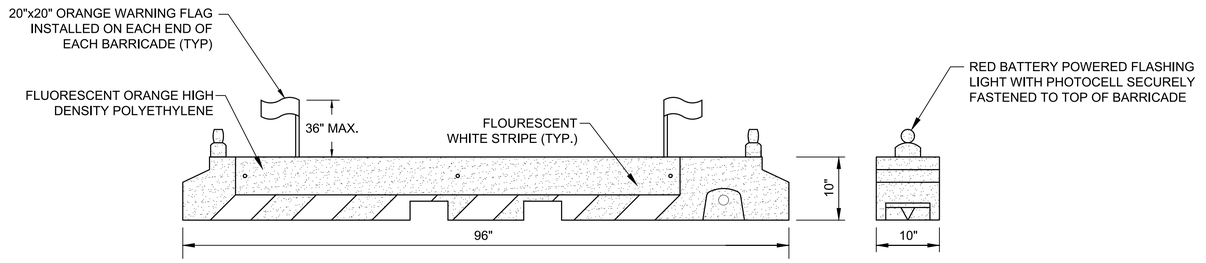
SHEET 3 OF 90 REV

CONSTRUCTION SAFETY AND PHASING NOTES:

1. CONTRACTOR SHALL SUBMIT A WRITTEN SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) TO THE RESIDENT PROJECT REPRESENTATIVE (RPR), CITY OF MANCHESTER-DEPARTMENT OF AVIATION, AND FAA FOR REVIEW AND APPROVAL PRIOR TO MOBILIZATION AND BEFORE ANY CONSTRUCTION IS ALLOWED TO BE PERFORMED. ANY DELAY IN THE ISSUANCE OF THE NOTICE TO PROCEED DUE TO THE FAILURE BY THE CONTRACTOR TO OBTAIN AN APPROVED SPCD WILL NOT BE GROUNDS FOR ANY CONTRACT TIME EXTENSION. THE CONTRACTOR SHALL BECOME KNOWLEDGEABLE OF THE REQUIREMENTS AND PROCEDURES OF THE FAA ADVISORY CIRCULAR NO. 150/5370-2G OR (CURRENT EDITION) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND THE APPROVED "CONSTRUCTION SAFETY AND PHASING PLAN" (CSPP), AND INCORPORATE RELEVANT ITEMS INTO THE SPCD WHICH MUST MEET OR EXCEED THE PROJECT'S CSPP REQUIREMENTS. THE SPCD SHALL BE MODIFIED AND UPDATED AS REQUIRED THROUGHOUT THE PROJECT TO ADDRESS EACH PHASE AND/OR SUB PHASE AS WORK PROGRESSES. SOME, BUT NOT ALL OF THE ITEMS, TO BE ADDRESSED IN THE SPCD ARE AS FOLLOWS:
   - IDENTIFICATION AND QUALIFICATIONS OF DEDICATED SAFETY & SECURITY POINT OF CONTACT.
   - WORK SCHEDULING, COORDINATION, AND NOTIFICATION PROCEDURES OF CONSTRUCTION ACTIVITIES.
   - AIRFIELD COMMUNICATIONS AND 24-HOUR EMERGENCY NOTIFICATION PROCEDURES.
   - CONSTRUCTION OPERATIONS ADJACENT TO OR WITHIN SAFETY AREAS, OBJECT FREE.
   - AREAS, NAVAID CRITICAL AREAS, AND APPROACH SURFACES. (I.E. GRADING, HAULING MATERIALS, ETC.).
   - METHODS AND REQUIREMENTS FOR SEPARATING CONSTRUCTION AREAS FROM AIRPORT OPERATIONS AREAS (AOA).
   - PREVENTING INTERFERENCE WITH FAA NAVAID (ILS OR OTHER) CRITICAL AREAS.
   - CONTROL OF FOREIGN OBJECT DEBRIS (FOD) AND DUST.
   - CONSTRUCTION VEHICLE REQUIREMENTS, PROCEDURES AND DRIVER TRAINING FOR ESCORT DRIVERS.
   - OPERATIONS WITHIN MOVEMENT AND NON-MOVEMENT AREAS TO PREVENT RUNWAY INCURSIONS.
   - CONTRACTOR ACCESS POINTS, VEHICLE CROSSING LOCATIONS, SECURITY FENCING AND GATES, AND EMPLOYEE SECURITY TRAINING.
   - PROCEDURES, REQUIREMENTS, AND COORDINATION OF RUNWAY AND/OR TAXIWAY CLOSURES, INCLUDING NOTICE TO AIRMEN (NOTAM) COORDINATION.
   - RSA DELINEATION MARKER PLACEMENT LOCATIONS, AND TEMPORARY CONSTRUCTION SIGN LOCATIONS.
   - PROCEDURES FOR MANAGING HAZARDOUS MATERIALS.
   - PROCEDURES FOR LOCATING & PROTECTING EXISTING UNDERGROUND UTILITIES.
2. THE CONSTRUCTION SAFETY AND PHASING PLANS HAVE BEEN REVIEWED AND ACCEPTED BY THE FAA AND MHT OPERATIONS. COMBINING, MODIFYING, OR ALTERING WORK AREAS WILL NOT BE ALLOWED WITHOUT APPROVAL FROM THE FAA AND MHT OPERATIONS. THE CONTRACTOR SHALL PREPARE THEIR BID BASED ON THE CONSTRUCTION PHASING SHOWN IN THESE DOCUMENTS. APPROVED MODIFICATIONS AFTER THE BID SHALL RESULT IN NO ADDITIONAL COST TO THE OWNER. ANY PROPOSED CHANGES FROM THE CONTRACTOR SHALL BE SUBMITTED THROUGH THE RPR WHO SHALL SUBMIT IT TO THE AIRPORT AND FAA. HOWEVER, CHANGES MAY NOT BE ACCEPTED.
3. CONTRACTOR SHALL PROVIDE A COMPETENT SAFETY PERSON (WHO ALSO COULD BE THE SUPERINTENDENT OR OTHER SUPERVISORY PERSON) FAMILIAR WITH AIRPORT SAFETY TO MONITOR CONSTRUCTION ACTIVITIES. THIS INDIVIDUAL WILL BE RESPONSIBLE FOR MONITORING CONSTRUCTION ACTIVITIES AND PERSONNEL FOR COMPLIANCE WITH THE SAFETY REQUIREMENTS ESTABLISHED BY THE CONTRACT DOCUMENTS, THE SPCD, THE REGULATIONS AND REQUIREMENTS OF THE AIRPORT, FAA, AND OTHER APPLICABLE AGENCIES.
4. CONTRACTOR SHALL PROVIDE A POINT OF CONTACT TO THE OWNER AND RPR WHO CAN BE CONTACTED AT ANY TIME THROUGHOUT THE COURSE OF THE CONTRACT. THIS INDIVIDUAL WILL BE CAPABLE OF COORDINATING AN IMMEDIATE RESPONSE TO CORRECT ANY CONSTRUCTION RELATED ACTIVITY THAT MAY ADVERSELY AFFECT THE OPERATIONAL SAFETY OF THE AIRPORT.
5. THE PRIMARY ACCESS POINT FOR AIRSIDE WORK AREAS 6, 7, AND 8 SHALL BE THROUGH A CONTRACTOR-INSTALLED, TEMPORARY ACCESS GATE INSTALLED PRIOR TO COMMENCING WORK AREA 5A WORK. ALL VEHICLES ENTERING THE AIRFIELD SHALL BE ESCORTED TO AND FROM THE WORK AREA BY MHT OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL PROJECT SUPPLIERS AND SUBCONTRACTORS OF THE HAUL ROUTE AND ACCESS POINT.
6. THE CONTRACTOR SHALL PROVIDE A GATE GUARD AT ALL TIMES WHEN THE GATE IS UNLOCKED. GATE GUARD RESPONSIBILITIES WILL BE TO IDENTIFY, REGULATE, AND DIRECT ALL CONSTRUCTION VEHICLES ENTERING THE AIR OPERATIONS AREA (AOA). ALL VEHICLES SHALL BE INSPECTED PRIOR TO ENTERING AOA. TEMPORARY CONSTRUCTION BADGES WILL BE ISSUED TO INDIVIDUALS THAT DO NOT HAVE A MHT BADGE. INDIVIDUALS ENTERING THE AOA MUST BE IN A VEHICLE. WALKING THROUGH A VEHICLE GATE IS NOT PERMITTED.
7. ALL CONTRACTOR'S MOTORIZED VEHICLES OPERATING IN AIRCRAFT MOVEMENT AREAS SHALL BE EQUIPPED WITH AN AMBER FLASHING LIGHT AND/OR A 3 SQUARE-FOOT FLAG CONSISTING OF INTERNATIONAL ORANGE AND WHITE SQUARES NOT LESS THAN ONE SQUARE-FOOT DISPLAYING IN FULL VIEW ABOVE THE VEHICLE. ALL CONTRACTOR VEHICLES SHALL HAVE THE COMPANY IDENTIFICATION AND TELEPHONE NUMBER PLAINLY VISIBLE ON BOTH SIDES OF THE VEHICLE.
8. UPON RECEIPT OF APPROVAL FOR A CLOSURE AND BEFORE EQUIPMENT ENTERS THE AIRFIELD AND CONSTRUCTION COMMENCES, THE WORK AREA SHALL BE SECURED. LIGHTING EQUIPMENT, RSA DELINEATION MARKERS AND SAFETY BARRICADES SHALL BE PLACED AND OPERATIONAL AS APPLICABLE. THE WORK AREA SHALL BE CLEARLY DELINEATED AND ALL SAFETY REQUIREMENTS SHALL BE APPROVED BY THE RPR PRIOR TO BEGINNING ANY WORK.
9. CONSTRUCTION SIGNS (I.E. "CONSTRUCTION TRAFFIC" WITH ARROWS, "NO UNAUTHORIZED VEHICLES BEYOND THIS POINT" OR OTHER STANDARD MANUAL OF UNIFORM TRAFFIC CONTROL DEVICE (MUTCD) SIGNS) SHALL BE LOCATED AT THE WORK AREA EGRESS/INGRESS POINTS. THERE SHALL BE NO SEPARATE PAYMENT FOR PROVIDING THESE SIGNS.
10. CONTRACTOR SHALL ENSURE THAT NO PAVEMENT LIPS, PAVEMENT EDGES, SIGN FOUNDATIONS, STRUCTURES OR OTHER APPURTENANCES EXCEED 3 INCHES WITHIN ACTIVE AIRCRAFT OPERATIONAL AREAS.
11. DAILY COORDINATION OF CONSTRUCTION ACTIVITIES SHALL BE HELD ON-SITE WITH THE RPR AND MHT OPERATIONS TO CLEARLY IDENTIFY THE LIMITS OF WORK FOR THE DAY. THE CONTRACTOR SHALL NOT EXCEED THE LIMITS OF WORK WITHOUT APPROVAL FROM THE RPR.
12. TEMPORARY TAXIWAY CLOSURES OR CAUTIONS AND/OR RUNWAY CLOSURES IN ACCORDANCE WITH THE CSPP ARE SUBJECT TO WIND/WEATHER AVAILABILITY AND ARE SUBJECT TO A RECALL TIME TO BE DETERMINED BY MHT OPERATIONS.
13. IF ALLOWED, WHEN WORKING UNDER A TAXIWAY CAUTION, ALL ADJACENT PAVEMENTS WILL BE AVAILABLE FOR UNLIMITED AIRCRAFT OPERATIONS. THE CONTRACTOR SHALL CONDUCT OPERATIONS IN SUCH A MANNER THAT NO INTERFERENCE WITH AIRCRAFT OPERATIONS WILL OCCUR. THE CONTRACTOR SHALL BE ESCORTED BY MHT OPERATIONS AND THE CONTRACTOR SHALL RELOCATE PERSONNEL AND EQUIPMENT A MINIMUM OF 129.5 FEET FROM THE TAXIWAY CENTERLINE, OR A MINIMUM OF 250' FROM RUNWAY CENTERLINE, TO ALLOW FOR SAFE PASSAGE OF AIRCRAFT AS REQUIRED.
14. DURING NIGHT WORK (IF ALLOWED), ALL LIGHTING EQUIPMENT UTILIZED SHALL BE CONTROLLED TO PREVENT STRAY LIGHT. THE CONTRACTOR SHALL DIRECT ALL LIGHTING AWAY FROM ADJACENT NEIGHBORHOODS AND IN A MANNER THAT DOES NOT INTERFERE WITH THE AIR TRAFFIC CONTROL TOWER AND AIRCRAFT OPERATIONS. THE CONTRACTOR SHALL PREPARE A LIGHTING PLAN TO BE REVIEWED AND APPROVED BY MHT OPERATIONS. MHT OPERATIONS SHALL APPROVE THE LOCATION AND OPERATION OF ALL LIGHTING EQUIPMENT.

GENERAL AVIATION BARRICADE NOTES:

1. THE RPR AND MHT OPERATIONS WILL HAVE FINAL DETERMINATION WHERE EACH TYPE OF BARRICADE (LOW PROFILE, CHANNELIZER CONES, TRAFFIC CONES, ETC.) SHALL BE PLACED.
2. BARRICADES SHALL BE WATER BALLASTED LIGHTED SAFETY BARRICADES AND RSA DELINEATION MARKERS AS DETAILED ON THIS SHEET OR APPROVED EQUAL.
3. ALL BARRICADES SHALL MEET REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5370-2G (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. MHT OPERATIONS MAINTAINS A SMALL SUPPLY OF LIGHTED CONSTRUCTION BARRICADES FOR CONTRACTOR USE. BARRICADES SHALL BE MHT OPERATIONS SUPPLIED TO THE GREATEST EXTENT POSSIBLE. IT IS ANTICIPATED THE CONTRACTOR WILL BE REQUIRED TO SUPPLY ADDITIONAL BARRICADES. THESE BARRICADES SHALL BE PROVIDED UNDER ITEM M-200-1 AND RETAINED BY THE CONTRACTOR AT COMPLETION OF THE PROJECT.
5. CONTRACTOR SHALL MAKE DAILY INSPECTIONS OF THE BARRICADES/CONES TO VERIFY LIGHTS ARE OPERATING EVERY NIGHT.
6. CONTRACTOR SHALL INSTALL OWNER PROVIDED "DO NOT ENTER" SIGNS ON TAXIWAYS TO BE CLOSED AT 260' FROM RUNWAY CENTERLINE AT THE REQUEST OF THE OWNER.

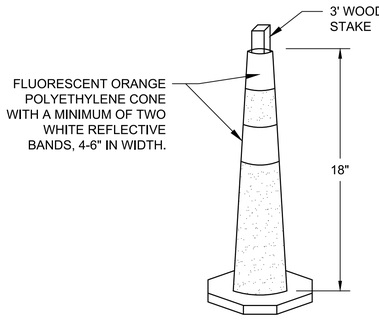


SAFETY BARRICADE NOTES:

1. BARRICADES SHALL BE MULTI-BARRIER SAFETY BARRICADES WITH REFLECTIVE STRIPING.
2. BARRIERS SHALL BE PLACED END TO END TO CREATE A CONTINUOUS BARRICADE.
3. BARRICADES SHALL BE ADEQUATELY WEIGHTED WITH WATER OR OTHER APPROVED METHOD TO WITHSTAND HIGH WINDS AND/OR JET BLAST.
4. CONTRACTOR SHALL MAINTAIN THE FLASHING LIGHT IN WORKING ORDER THROUGHOUT THE PROJECT.

WATER BALLASTED LIGHTED SAFETY BARRICADE

NOT TO SCALE
(INCIDENTAL TO ITEM M-200-1)



RSA DELINEATION MARKER NOTES:

1. MARKER CONES SHALL BE SPACED AT 20' ON CENTER TO PROTECT THE RUNWAY SAFETY AREA AND SHALL BE PLACED 260' FROM THE RUNWAY CENTERLINE.
2. CONTRACTOR SHALL MAKE FREQUENT INSPECTION OF THE MARKER CONES AND SHALL RELOCATE ANY CONES THAT ARE MISALIGNED.
3. TRAFFIC CONES SHALL BE ADEQUATELY SECURED TO WITHSTAND HIGH WINDS AND/OR JET BLAST USING GRADE STAKES AS SHOWN.
4. INSTALLATION, REMOVAL AND RELOCATION OF WORK AREA DELINEATION MARKERS AS DIRECTED BY THE RPR IS INCIDENTAL TO ITEM M-200-1.

RSA DELINEATION MARKER

NOT TO SCALE
(INCIDENTAL TO ITEM M-200-1)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN R. LAVOIE
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

SAFETY AND PHASING NOTES

SCALE: NTS
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

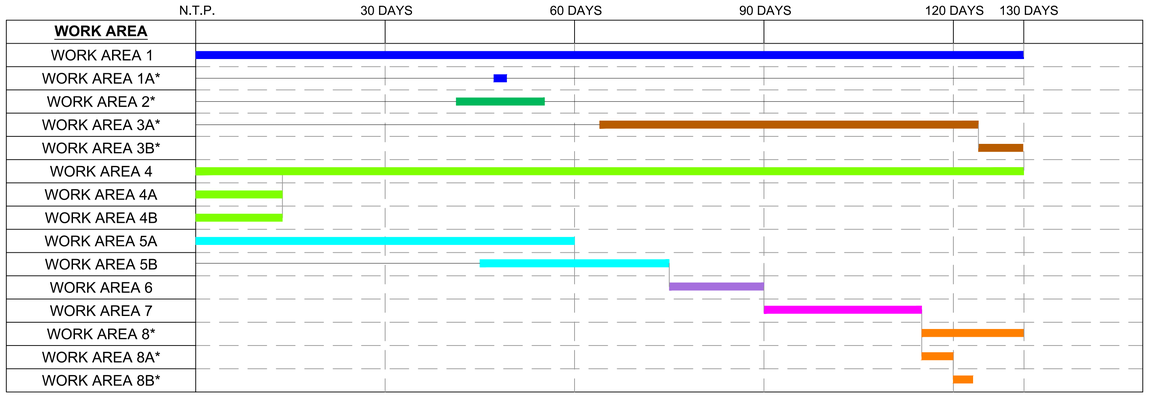
DRAWING NO.
GN-01

SHEET 4 OF 90
REV

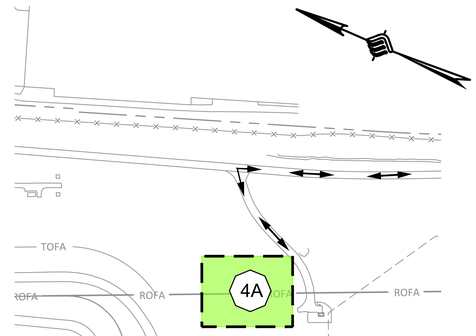
PHASE 2		
WORK AREA	**CONTRACT DURATION**	**REQUIREMENT TO BEGIN**
WORK AREA 4	130 CALENDAR DAYS	NOTICE TO PROCEED
WORK AREA 4A	14 CALENDAR DAYS IN WORK AREA 4 DURATION	NOTICE TO PROCEED
WORK AREA 4B	14 CALENDAR DAYS IN WORK AREA 4 DURATION	NOTICE TO PROCEED
WORK AREA 5A	60 CALENDAR DAYS IN WORK AREA 4 DURATION	NOTICE TO PROCEED
WORK AREA 5B	30 CALENDAR DAYS IN WORK AREA 4 DURATION	NOTICE TO PROCEED
WORK AREA 6	15 CALENDAR DAYS IN WORK AREA 4 DURATION	COMPLETION OF WORK AREA 5B
WORK AREA 7	25 CALENDAR DAYS IN WORK AREA 4 DURATION	COMPLETION OF WORK AREA 6
WORK AREA 8	15 CALENDAR DAYS IN WORK AREA 4 DURATION	COMPLETION OF WORK AREA 7
WORK AREA 8A	5 CALENDAR DAYS IN WORK AREA 7 DURATION	COMPLETION OF WORK AREA 7
WORK AREA 8B	3 CALENDAR DAYS IN WORK AREA 7 DURATION	COMPLETION OF WORK AREA 7
TOTAL DURATION: 130 CALENDAR DAYS		

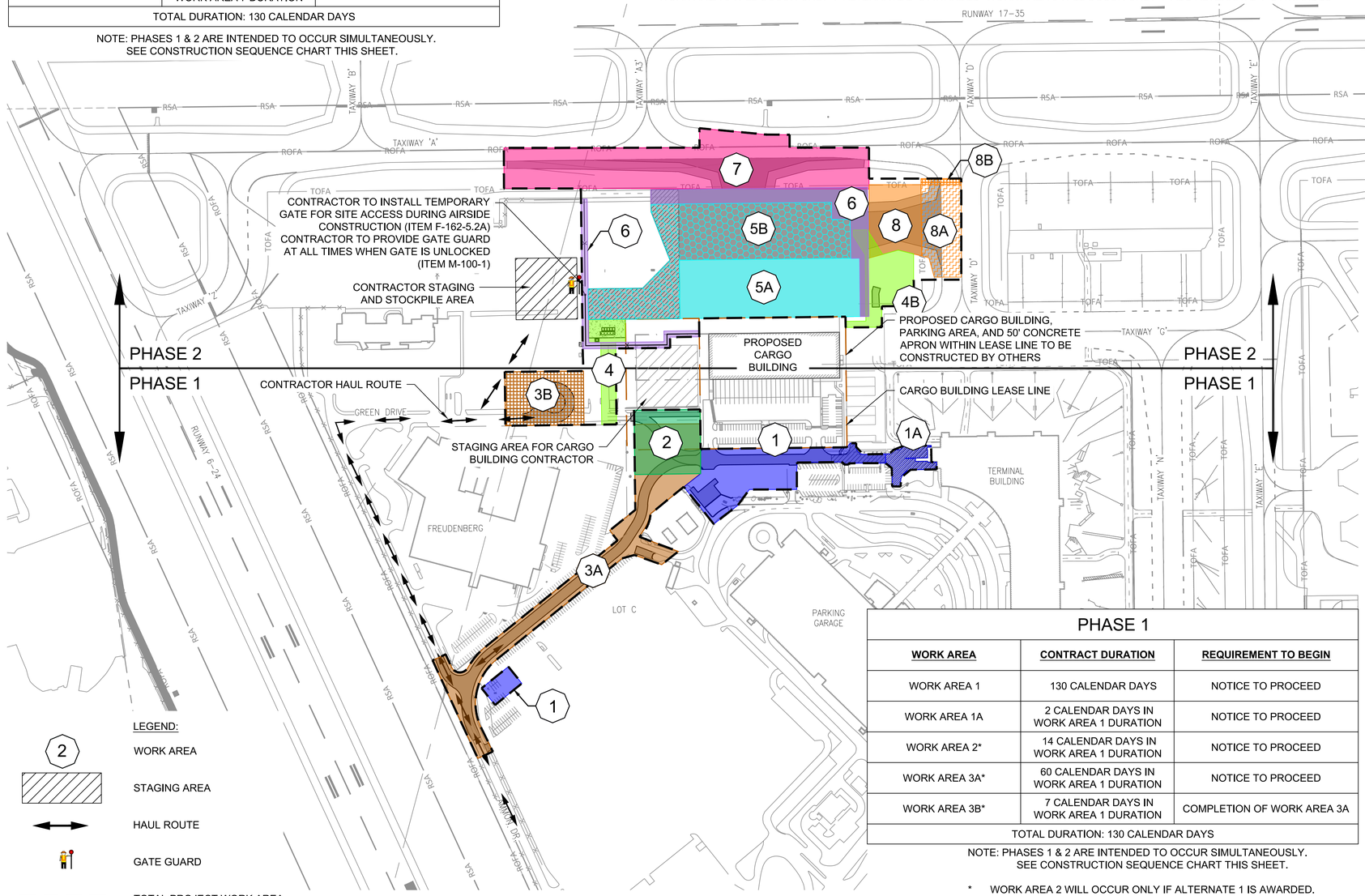
NOTE: PHASES 1 & 2 ARE INTENDED TO OCCUR SIMULTANEOUSLY.
SEE CONSTRUCTION SEQUENCE CHART THIS SHEET.

CONSTRUCTION SEQUENCE CHART



* WORK AREA 1A WILL OCCUR ONLY IF ADD ALTERNATE 3 IS AWARDED. WORK AREA 2 WILL OCCUR ONLY IF ALTERNATE 1 IS AWARDED.
WORK AREA 3 WILL OCCUR ONLY IF ALTERNATE 2 IS AWARDED. WORK AREA 8 WILL OCCUR ONLY IF ADD ALTERNATE 4 IS AWARDED.





LEGEND:

- 2 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- GATE GUARD
- TOTAL PROJECT WORK AREA

PHASE 1		
WORK AREA	**CONTRACT DURATION**	**REQUIREMENT TO BEGIN**
WORK AREA 1	130 CALENDAR DAYS	NOTICE TO PROCEED
WORK AREA 1A	2 CALENDAR DAYS IN WORK AREA 1 DURATION	NOTICE TO PROCEED
WORK AREA 2*	14 CALENDAR DAYS IN WORK AREA 1 DURATION	NOTICE TO PROCEED
WORK AREA 3A*	60 CALENDAR DAYS IN WORK AREA 1 DURATION	NOTICE TO PROCEED
WORK AREA 3B*	7 CALENDAR DAYS IN WORK AREA 1 DURATION	COMPLETION OF WORK AREA 3A
TOTAL DURATION: 130 CALENDAR DAYS		

NOTE: PHASES 1 & 2 ARE INTENDED TO OCCUR SIMULTANEOUSLY.
SEE CONSTRUCTION SEQUENCE CHART THIS SHEET.

* WORK AREA 2 WILL OCCUR ONLY IF ALTERNATE 1 IS AWARDED.
WORK AREA 3 WILL OCCUR ONLY IF ALTERNATE 2 IS AWARDED.

OVERALL CONSTRUCTION SAFETY AND PHASING NOTES:

1. THIS PROJECT WILL OCCUR SIMULTANEOUSLY WITH OTHER PROJECTS IN THE SAME AREA. CONTRACTOR TO COORDINATE WORK WITH OTHER CONTRACTORS.
2. ALL AIRFIELD MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES, WHETHER SHOWN ON THE PLANS OR REQUESTED BY MHT OPERATIONS OR RESIDENT PROJECT REPRESENTATIVE (RPR), SHALL BE CONSIDERED INCIDENTAL TO ITEM M-200-1.
3. ALL LANDSIDE MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES REQUIRED FOR THE SAFETY AND EFFICIENCY OF VEHICULAR AND PEDESTRIAN TRAVEL AROUND WORK SITE SHALL BE CONSIDERED INCIDENTAL TO ITEM M-200-2.
4. CONTRACTOR SHALL PLACE LIGHTED BARRICADES FOR EACH INDIVIDUAL WORK AREA TO THE APPROVAL OF MHT OPERATIONS PRIOR TO THE COMMENCEMENT OF WORK. INSTALLATION AND REMOVAL OF BARRICADES IS CONSIDERED INCIDENTAL TO ITEM M-200-1.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A GATE GUARD TO MONITOR AND REGULATE ALL CONSTRUCTION VEHICLES LEAVING OR ENTERING THE SITE AT ALL TIMES WHEN GATE IS UNLOCKED. GATE GUARD PAYMENT WILL BE UNDER ALLOWANCE ITEM M-100-1.
6. NO WORK MAY OCCUR WITHIN 129.5' OF THE CENTERLINE OF ANY OPEN TAXIWAY, OR WITHIN 250' OF THE CENTERLINE OF ANY OPEN RUNWAY, UNLESS EXPLICITLY DETAILED ON THE SAFETY AND PHASING PLANS.
7. ALL WORK WITHIN TAXIWAY OBJECT FREE AREAS MUST BE COORDINATED WITH THE RPR AND AIRPORT OPERATIONS AT LEAST 72 HOUR IN ADVANCE TO THE START OF WORK.
8. WHEN SWITCHING WORK AREAS, MHT OPERATIONS MUST BE NOTIFIED, AT A MINIMUM, 72 HOURS IN ADVANCE. CONTRACTOR SHALL COORDINATE A LOOK-AHEAD PHASING SCHEDULE WITH THE RPR.
9. ALL VEHICLES FROM THE CONSTRUCTION WORK AREAS SHALL BE CLEAR FROM FOREIGN OBJECT DEBRIS (FOD) PRIOR TO ENTERING AND LEAVING THE SITE.
10. ALL HAUL ROUTES SHALL BE RESTORED TO THEIR EXISTING CONDITION OR BETTER FOLLOWING CONSTRUCTION.
11. ANY PAVEMENT OR OTHER STRUCTURE DAMAGED DUE TO CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
12. ANY PAVEMENT MARKING DAMAGED OR OBSCURED DUE TO HEAVY TRAFFIC SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
13. CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT BEST MANAGEMENT PRACTICES PRIOR TO COMMENCEMENT OF WORK.
14. REFER TO TABLE ON THIS SHEET FOR SEQUENCE OF CONSTRUCTION WORK AREAS. THE CONTRACTOR SHALL NOT DEVIATE FROM THIS SEQUENCE UNLESS APPROVED BY THE RPR AND MHT OPERATIONS.
15. EDGE LIGHTS AND AIRFIELD GUIDANCE SIGNS WITHIN THE WORK AREA OR DIRECTED AIRCRAFT INTO WORK AREA SHALL BE DISCONNECTED OR COVERED. ALL TEMPORARY JUMPER LOCATIONS REQUIRED TO MAINTAIN OPERATIONAL LIGHTING CIRCUITS OUTSIDE OF THE WORK AREA SHALL BE PROPOSED BY THE CONTRACTOR AND APPROVED BY THE RPR AND AIRPORT OPERATIONS PRIOR TO INSTALLATION. ITEMS TO MAINTAIN AIRCRAFT GUIDANCE SHALL BE PAID FOR UNDER MAINTENANCE AND PROTECTION OF TRAFFIC - AIRSIDE (ITEM M-200-1)
16. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO OUTLINE METHODS FOR CONTROLLING TRAFFIC DURING WORK AREAS. PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL FROM THE ENGINEER AND THE AIRPORT. TRAFFIC CONTROL PLAN SHALL BE CONSIDERED INCIDENTAL TO ITEM M-200-2.

0 200 400 600 FT
SCALE

ENGINEER'S SEAL
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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING PLAN – OVERALL PLAN

SCALE: 1" = 200' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3–33–0011–XXX–2021

DRAWING NO.
CS–00

SHEET 5 OF 90 REV

WORK AREA 1A WILL OCCUR IF ADD ALTERNATE 3 IS AWARDED

WORK AREA 1

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE BASE BID PORTION OF THE NEW ACCESS ROAD TO THE PROPOSED CARGO BUILDING AND THE RECONFIGURATION OF THE QUICK TURNAROUND FACILITY.

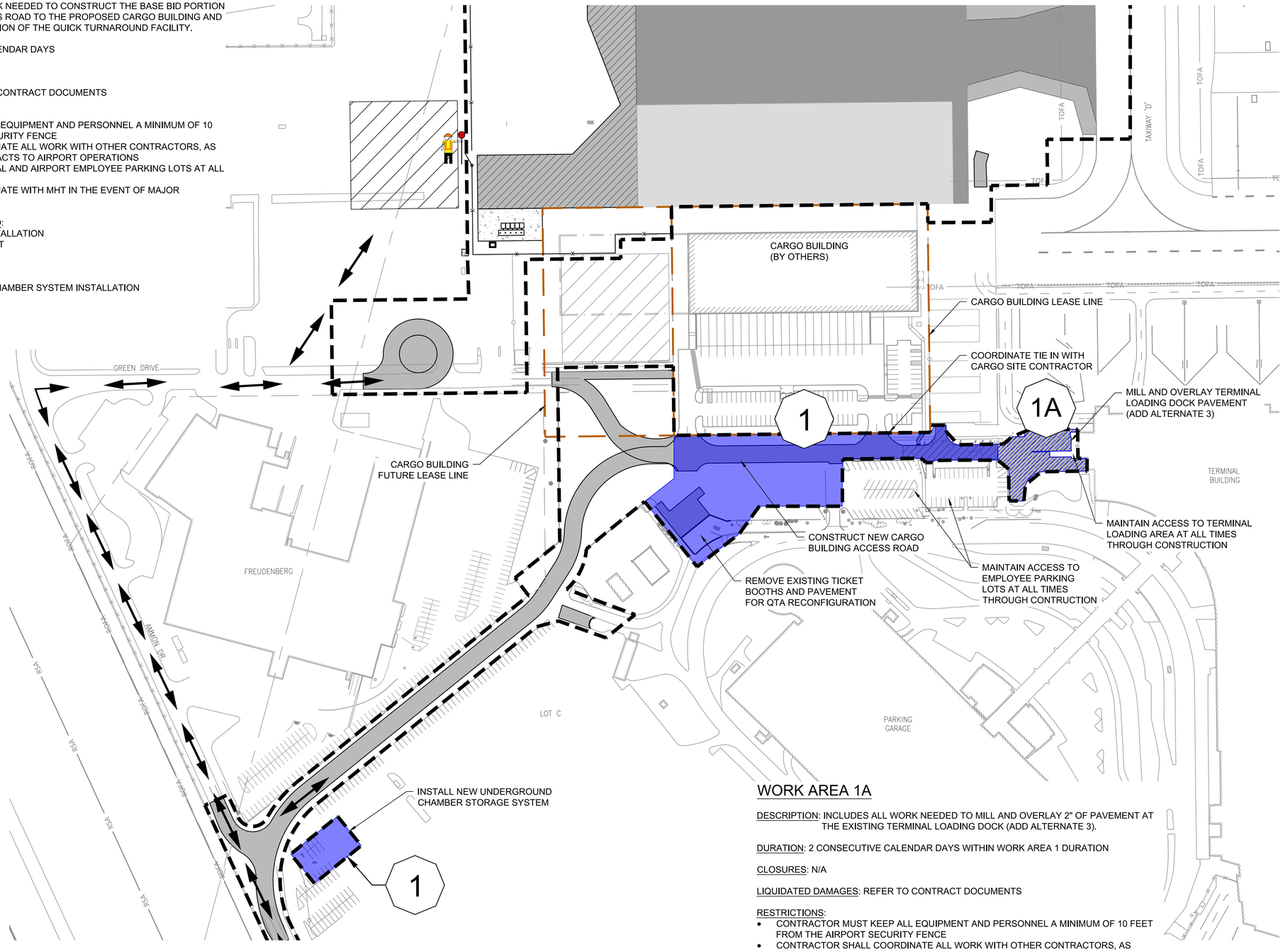
DURATION: 130 CONSECUTIVE CALENDAR DAYS

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:
- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- MAINTAIN ACCESS TO TERMINAL AND AIRPORT EMPLOYEE PARKING LOTS AT ALL TIMES
- CONTRACTOR SHALL COORDINATE WITH MHT IN THE EVENT OF MAJOR DELIVERIES

PRIMARY WORK TO BE COMPLETED:
1. EROSION CONTROL BMP INSTALLATION
2. RECLAIM EXISTING PAVEMENT
3. MILL EXISTING PAVEMENT
4. PAVEMENT REMOVAL
5. DRAINAGE IMPROVEMENTS
6. UNDERGROUND STORAGE CHAMBER SYSTEM INSTALLATION
7. PAVE BINDER COURSE
8. CURB INSTALLATION
9. PAVE SURFACE COURSE
10. FENCE INSTALLATION
11. TOPSOIL, SEED, MULCH



LEGEND:
- 1 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- RUNWAY DELINEATION CONE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA

WORK AREA 1A

DESCRIPTION: INCLUDES ALL WORK NEEDED TO MILL AND OVERLAY 2" OF PAVEMENT AT THE EXISTING TERMINAL LOADING DOCK (ADD ALTERNATE 3).

DURATION: 2 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 1 DURATION

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:
- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- MAINTAIN ACCESS TO TERMINAL AND EMPLOYEE PARKING LOTS AT ALL TIMES
- CONTRACTOR SHALL COORDINATE WITH MHT IN EVENT OF MAJOR DELIVERIES.

PRIMARY WORK TO BE COMPLETED:
1. EROSION CONTROL BMP INSTALLATION
2. MILL EXISTING PAVEMENT
3. PAVING OPERATIONS

0 100 200 300 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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CHECKED BY: BMB
DRAWN BY: BRF
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN – WORK AREAS 1A & 1B

SCALE: 1" = 100'
DATE: MARCH 2022

REVISIONS

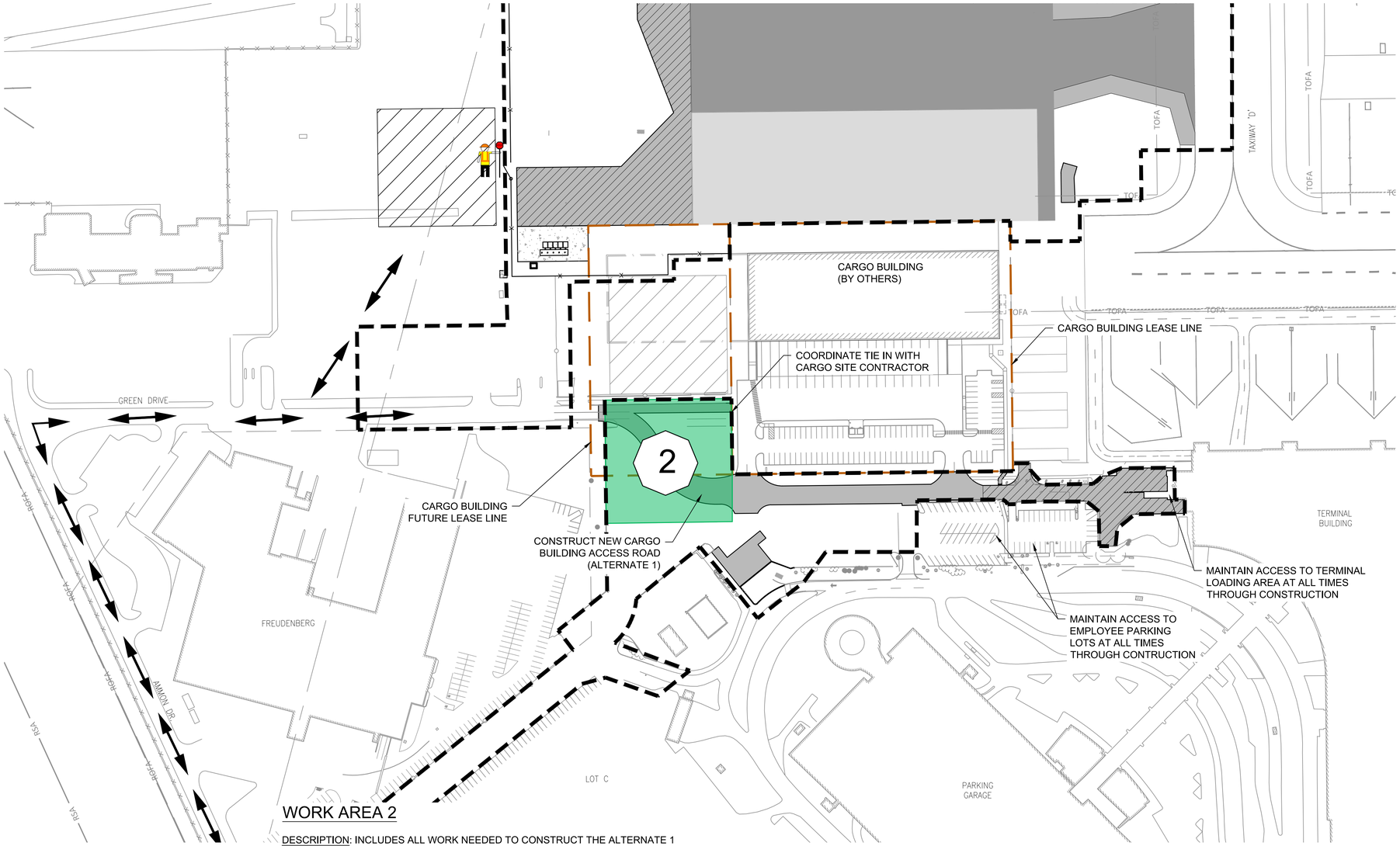
REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-01

SHEET 6 OF 90
REV

WORK AREA 2 WILL OCCUR IF ALTERNATE 1 IS AWARDED



WORK AREA 2

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE ALTERNATE 1 PORTION OF THE NEW ACCESS ROAD TO THE PROPOSED CARGO BUILDING.

DURATION: 14 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 1 DURATION

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- WORK AREA 2 WILL OCCUR IF ALTERNATE 1 IS AWARDED, BUT IT WILL NOT OCCUR IF ALTERNATE 2 IS AWARDED.
- MAINTAIN ACCESS TO TERMINAL AND AIRPORT EMPLOYEE PARKING LOTS AT ALL TIMES DURING CONSTRUCTION

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. RECLAIM EXISTING PAVEMENT
3. PAVEMENT REMOVAL
4. DRAINAGE IMPROVEMENTS
5. PAVING OPERATIONS
6. FENCE INSTALLATION
7. TOPSOIL, SEED, MULCH

LEGEND:

- 2 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- RUNWAY DELINEATION CONE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA

0 100 200 300 FT
SCALE

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DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN – WORK AREA 2

SCALE: 1" = 100'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-02

SHEET 7 OF 90
REV

WORK AREA 3A & 3B WILL OCCUR IF ALTERNATE 2 IS AWARDED

WORK AREA 3B

DESCRIPTION: INCLUDES ALL WORK NEEDED TO RECONFIGURE GREEN DRIVE AND INSTALL NEW CUL-DE-SAC.

DURATION: 7 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 1 DURATION TO OCCUR ONCE ALL WORK AREA 3A WORK HAS BEEN COMPLETED

CLOSURES: N/A

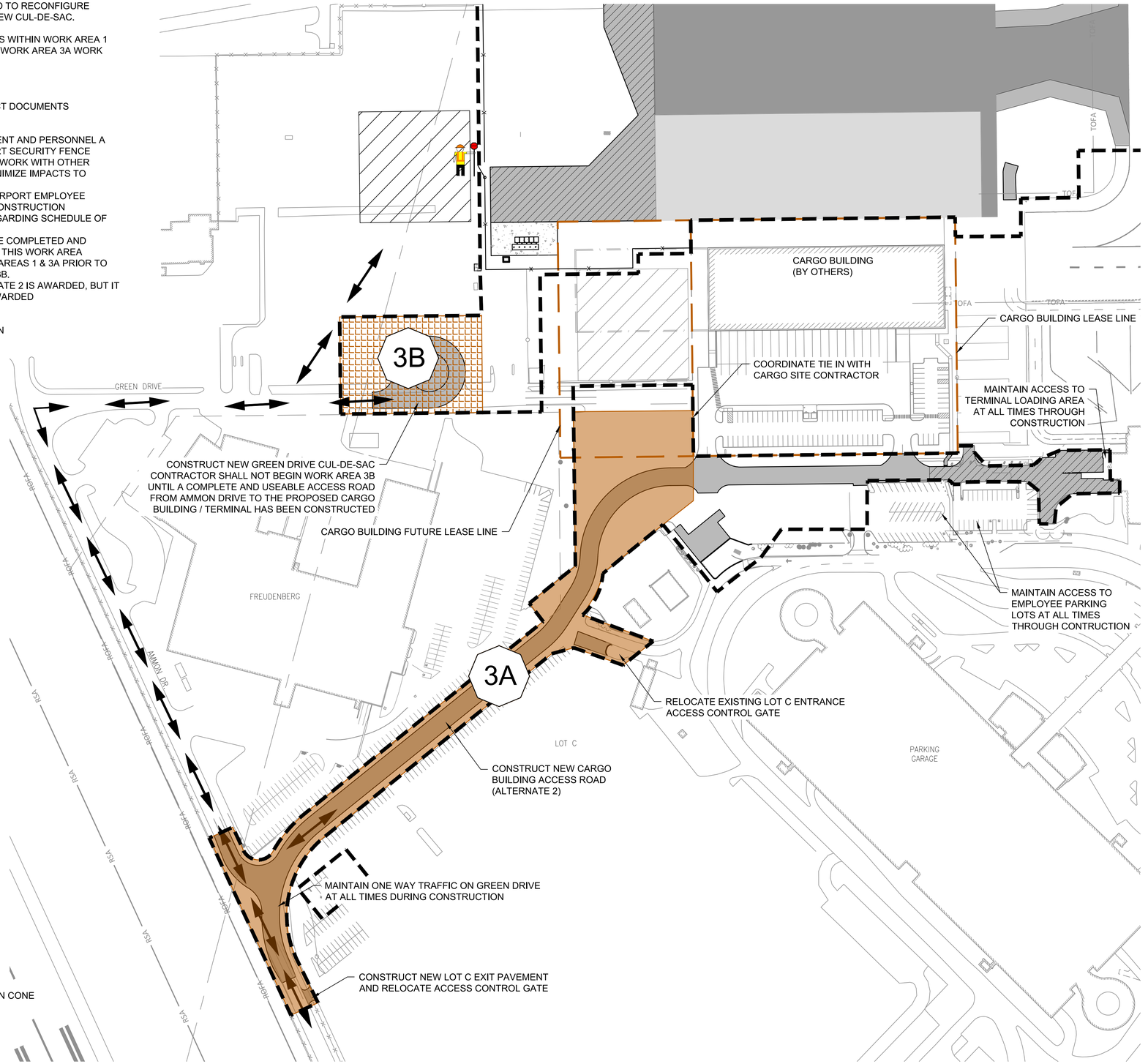
LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- MAINTAIN ACCESS TO TERMINAL AND AIRPORT EMPLOYEE PARKING LOTS AT ALL TIMES DURING CONSTRUCTION
- PROVIDE ADVANCED NOTIFICATION REGARDING SCHEDULE OF RECONFIGURING GREEN DRIVE
- THE PROPOSED ACCESS ROAD MUST BE COMPLETED AND USABLE PRIOR TO COMMENCEMENT OF THIS WORK AREA
- CONTRACTOR MUST COMPLETE WORK AREAS 1 & 3A PRIOR TO THE COMMENCEMENT OF WORK AREA 3B.
- WORK AREA 3B WILL OCCUR IF ALTERNATE 2 IS AWARDED, BUT IT WILL NOT OCCUR IF ALTERNATE 1 IS AWARDED

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. RECLAIM EXISTING PAVEMENT
3. DRAINAGE IMPROVEMENTS
4. PAVING OPERATIONS



LEGEND:

- WORK AREA (3)
- STAGING AREA
- HAUL ROUTE
- RUNWAY DELINEATION CONE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA

WORK AREA 3A

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE ALTERNATE 2 PORTION OF THE NEW ACCESS ROAD TO THE PROPOSED CARGO BUILDING.

DURATION: 60 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 1 DURATION

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- MAINTAIN ACCESS TO TERMINAL AND AIRPORT EMPLOYEE PARKING LOTS AT ALL TIMES DURING CONSTRUCTION.
- MAINTAIN, AT A MINIMUM, ONE LANE OF TRAFFIC ON GREEN DRIVE AT ALL TIMES
- COORDINATE WORK AROUND FREUDENBERG SHIFT CHANGE PEAK TRAFFIC HOURS
- WORK AREA 3A WILL OCCUR IF ALTERNATE 2 IS AWARDED, BUT IT WILL NOT OCCUR IF ALTERNATE 1 IS AWARDED.

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. RELOCATE LOT C ACCESS CONTROL GATES
3. RECLAIM EXISTING PAVEMENT
4. PAVEMENT REMOVAL
5. UNCLASSIFIED EXCAVATION
6. DRAINAGE IMPROVEMENTS
7. PAVING OPERATIONS
8. FENCE INSTALLATION
9. TOPSOIL, SEED, MULCH

0 100 200 300 FT
SCALE

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THE STATE OF NEW HAMPSHIRE
BRIAN B. BURNETT
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MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN – WORK AREAS 3A & 3B

SCALE: 1" = 100' | DATE: MARCH 2022

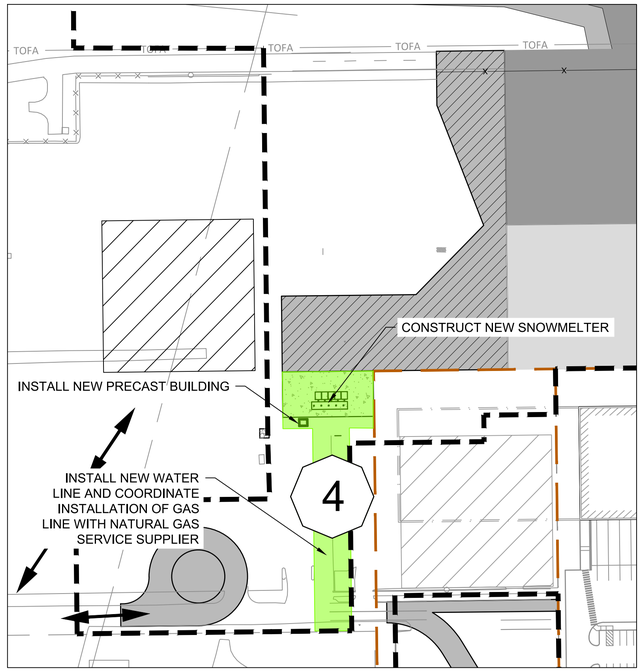
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-03

SHEET 8 OF 90
REV



WORK AREA 4

DESCRIPTION: INCLUDES ALL WORK NEEDED TO INSTALL THE NEW SNOWMELTER, PRECAST BUILDING, CONCRETE MELTING PAD, AND UTILITIES AS WELL AS THE RELOCATION OF THE SECURITY FENCE AND VEHICLE SERVICE ROAD (VSR).

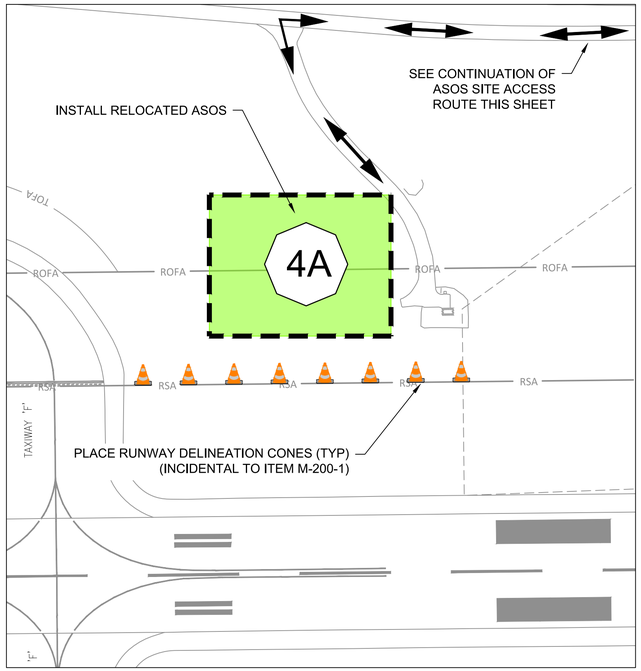
DURATION: 130 CONSECUTIVE CALENDAR DAYS

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- SNOWMELTER INSTALLATION MAY OCCUR CONCURRENTLY WITH ALL OTHER PHASE 2 WORK AREAS.
- COORDINATE THE INSTALLATION OF THE GAS LINE WITH THE NATURAL GAS SUPPLIER, LIBERTY UTILITIES.

PRIMARY WORK TO BE COMPLETED:
1. EROSION CONTROL BMP INSTALLATION
2. PAVEMENT REMOVAL
3. UNCLASSIFIED EXCAVATION
4. CONCRETE PAD INSTALLATION
5. UTILITY INSTALLATION AND BACKFILL
6. SNOWMELTER BUILDING INSTALLATION
7. SNOWMELTER INSTALLATION
8. INSTALL TEMPORARY FENCE ON CONCRETE BARRIERS (SEE WORK AREA 4B)
9. CONSTRUCT TEMPORARY VSR (SEE WORK AREA 4B)



WORK AREA 4A

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE NEW AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS) LOCATION.

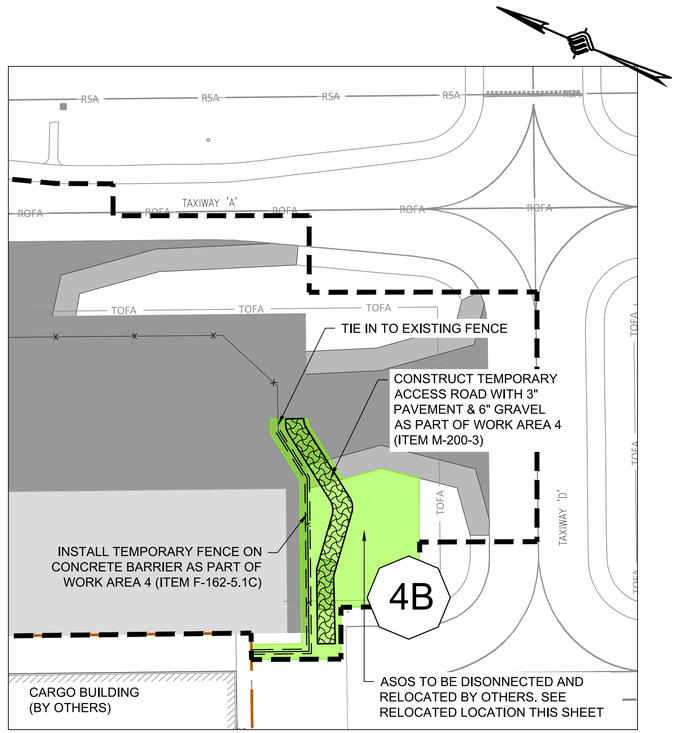
DURATION: 14 CONSECUTIVE CALENDAR DAYS TO OCCUR SIMULTANEOUSLY WITH WORK AREA 4B

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:
- CONTRACTOR TO PLACE RUNWAY DELINEATION CONES PRIOR TO COMMENCEMENT OF WORK AREA 4A.
- CONTRACTOR TO ACCESS SITE VIA GATE 9 AS SHOWN.
- CONTRACTOR TO INSTALL SIGNAGE AS REQUIRED BY AIRPORT TO DIRECT CONSTRUCTION VEHICLES
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- CONTRACTOR TO COORDINATE RELOCATION OF ASOS WITH RPR & MHT OPERATIONS

PRIMARY WORK TO BE COMPLETED:
1. EROSION CONTROL BMP INSTALLATION
2. UNCLASSIFIED EXCAVATION
3. INSTALL UNDERGROUND POWER AND UTILITIES
4. CONSTRUCT CONCRETE PADS
5. INSTALL NEW RAIL SUPPORT INFRASTRUCTURE
6. CONSTRUCT NEW DRIVEWAY ACCESS
7. CONNECT RELOCATED ASOS IN NEW LOCATION (BY OTHERS)
8. TOPSOIL, SEED, MULCH



WORK AREA 4B

DESCRIPTION: INCLUDES ALL WORK NEEDED TO PREPARE EXISTING ASOS SITE FOR DISCONNECT AND RELOCATION WHICH WILL BE PERFORMED BY OTHERS.

DURATION: 14 CONSECUTIVE CALENDAR DAYS TO OCCUR SIMULTANEOUSLY WITH WORK AREA 4A

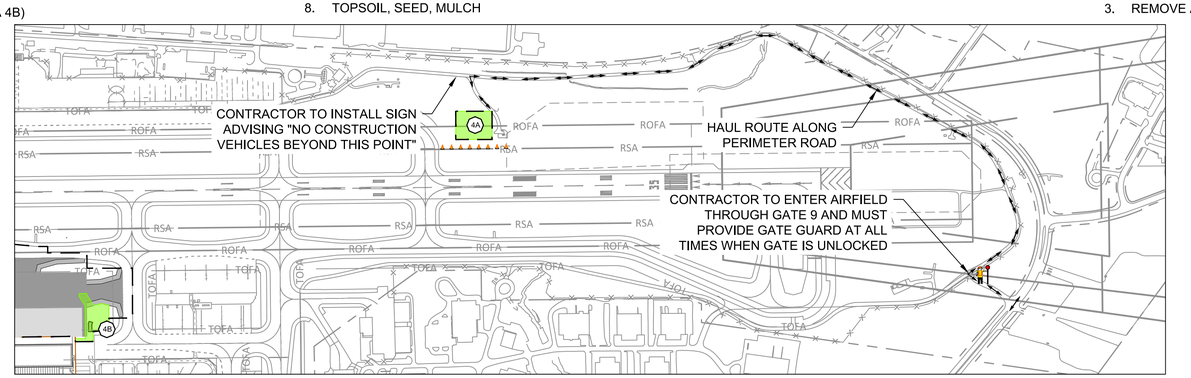
CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:
- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- CONTRACTOR TO REMAIN OUTSIDE TAXIWAY D OBJECT FREE AREA AT ALL TIMES, PLACE BARRICADES AS REQUESTED BY AIRPORT OPERATIONS
- CONTRACTOR TO COORDINATE RELOCATION OF ASOS WITH RPR AND MHT OPERATIONS
- TEMPORARY ACCESS ROAD MUST FEATURE (1) 3" LIFT NHDOT STATE MIX ASPHALT AND 6" NHDOT STATE MIX GRAVEL
- ASOS POWER FEED ALONG EXISTING SECURITY FENCE MUST BE RELOCATED PRIOR TO FENCE REMOVAL AND TEMPORARY FENCE INSTALLATION

PRIMARY WORK TO BE COMPLETED:
1. EROSION CONTROL BMP INSTALLATION
2. DISCONNECT EXISTING ASOS (BY OTHERS)
3. REMOVE ABANDONED EQUIPMENT

LEGEND:
- 4 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- RUNWAY DELINEATION CONE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA



ASOS SITE ACCESS ROUTE

SCALE: 1" = 500'

0 100 200 300 FT
SCALE

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MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN – WORK AREAS 4, 4A & 4B

SCALE: 1" = 100' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-04

SHEET 9 OF 90 REV

WORK AREA 5A

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE NEW CONCRETE APRON SECTION.

DURATION: 60 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 4 DURATION

CLOSURES: N/A

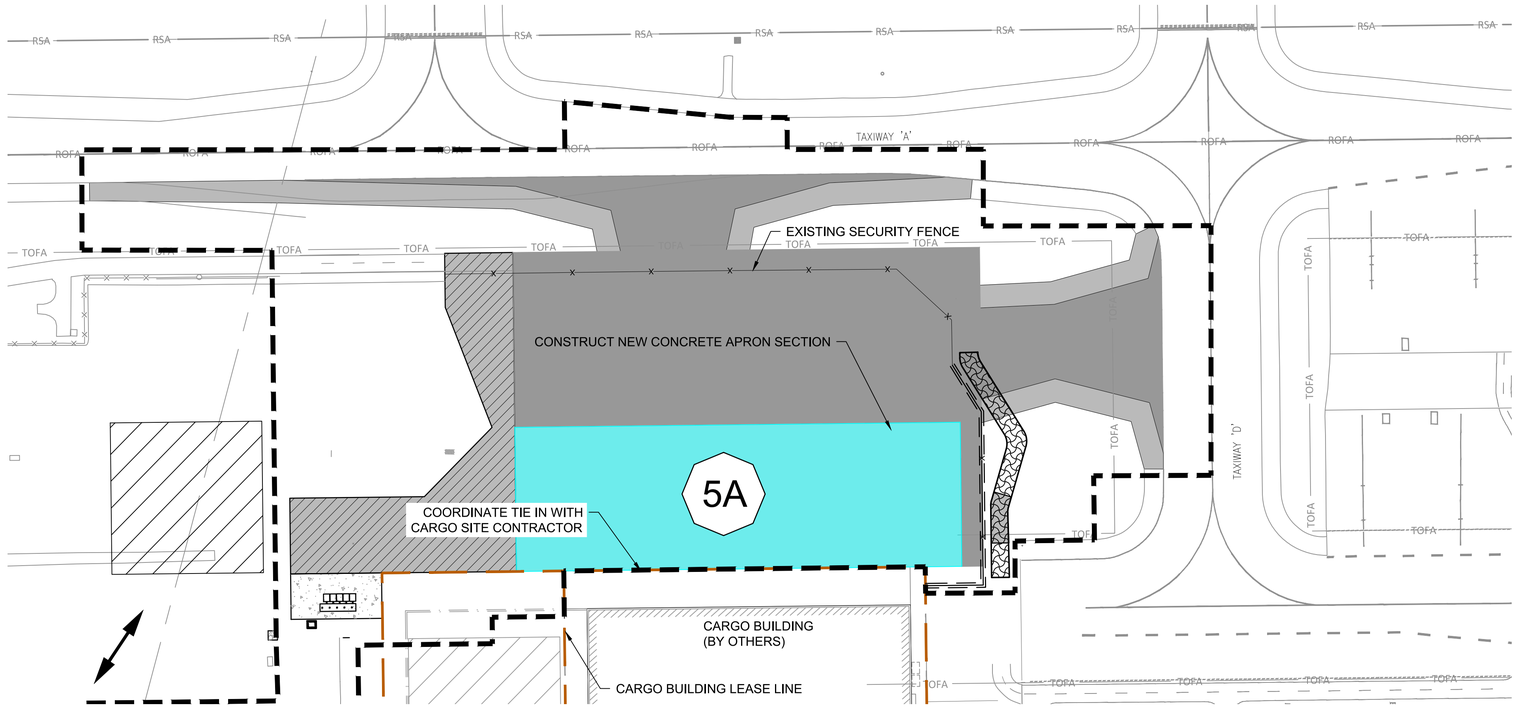
LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- CONTRACTOR MAY BEGIN WORK IN WORK AREA 5A DURING WORK AREAS 4A & 4B, HOWEVER, THE PORTION OF THE EXISTING FENCE HAVING THE EXISTING TEMPORARY ASOS POWER FEED SHALL REMAIN IN PLACE UNTIL THE RELOCATION OF THE ASOS SYSTEM TO ITS NEW LOCATION. IT IS ANTICIPATED THAT THE ASOS RELOCATION WORK WILL OCCUR WITHIN THE FIRST 30 DAYS FOLLOWING THE NOTICE TO PROCEED AND THE EXISTING FENCE WILL BE REMOVED AS PART OF THAT WORK AREA UPON RELOCATION OF THE ASOS EQUIPMENT. THE CONTRACTOR WILL PHASE THE INSTALLATION OF THE CONCRETE APRON WITHIN WORK AREA 5A TO ALLOW FOR THE LATER INSTALLATION OF THE AFFECTED SOUTHERN SECTION OF THE CONCRETE APRON AREA AND ASSOCIATED IMPROVEMENTS.

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. PAVEMENT REMOVAL
3. UNCLASSIFIED EXCAVATION
4. DRAINAGE IMPROVEMENTS
5. SUBBASE AND BASE COURSE INSTALLATION
6. CONCRETE APRON CONSTRUCTION



WORK AREA 5B

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE NEW ASPHALT APRON SECTION THAT OCCURS LANDSIDE.

DURATION: 30 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 4 DURATION

CLOSURES: N/A

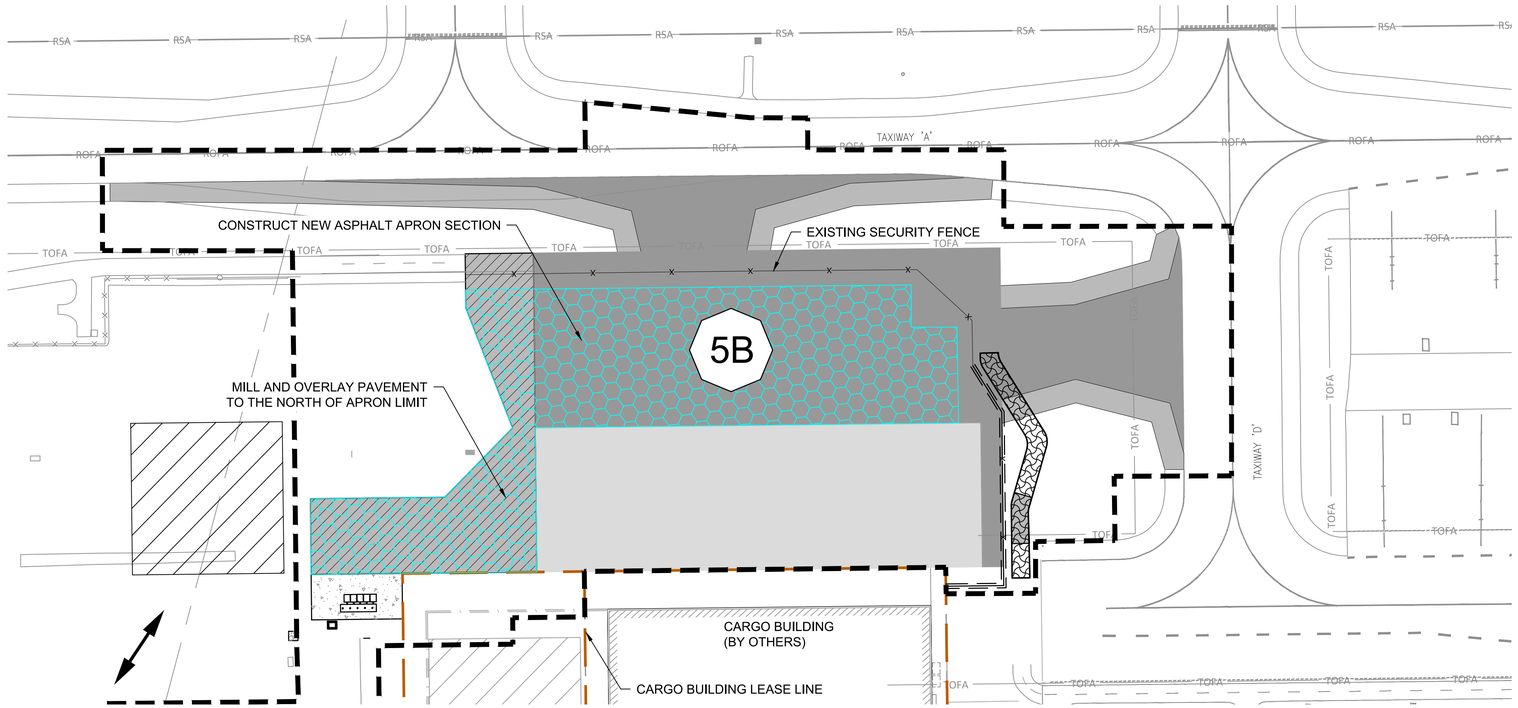
LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- WORK AREA 5A DURATION MAY OVERLAP WITH WORK AREA 5B.

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. PAVEMENT REMOVAL
3. UNCLASSIFIED EXCAVATION
4. DRAINAGE IMPROVEMENTS
5. SUBBASE AND BASE COURSE INSTALLATION
6. PAVING OPERATIONS



LEGEND:

- 5 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA

0 100 200 300 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING PLAN – WORK AREAS 5A & 5B

SCALE: 1" = 100' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-05

SHEET 10 OF 90 REV

WORK AREA 6

DESCRIPTION: INCLUDES ALL WORK NEEDED TO INSTALL THE NEW AIRPORT SECURITY FENCE AND CONSTRUCT THE NEW ASPHALT APRON SECTION THAT OCCURS AIRSIDE.

DURATION: 15 CONSECUTIVE CALENDAR DAYS

CLOSURES: N/A

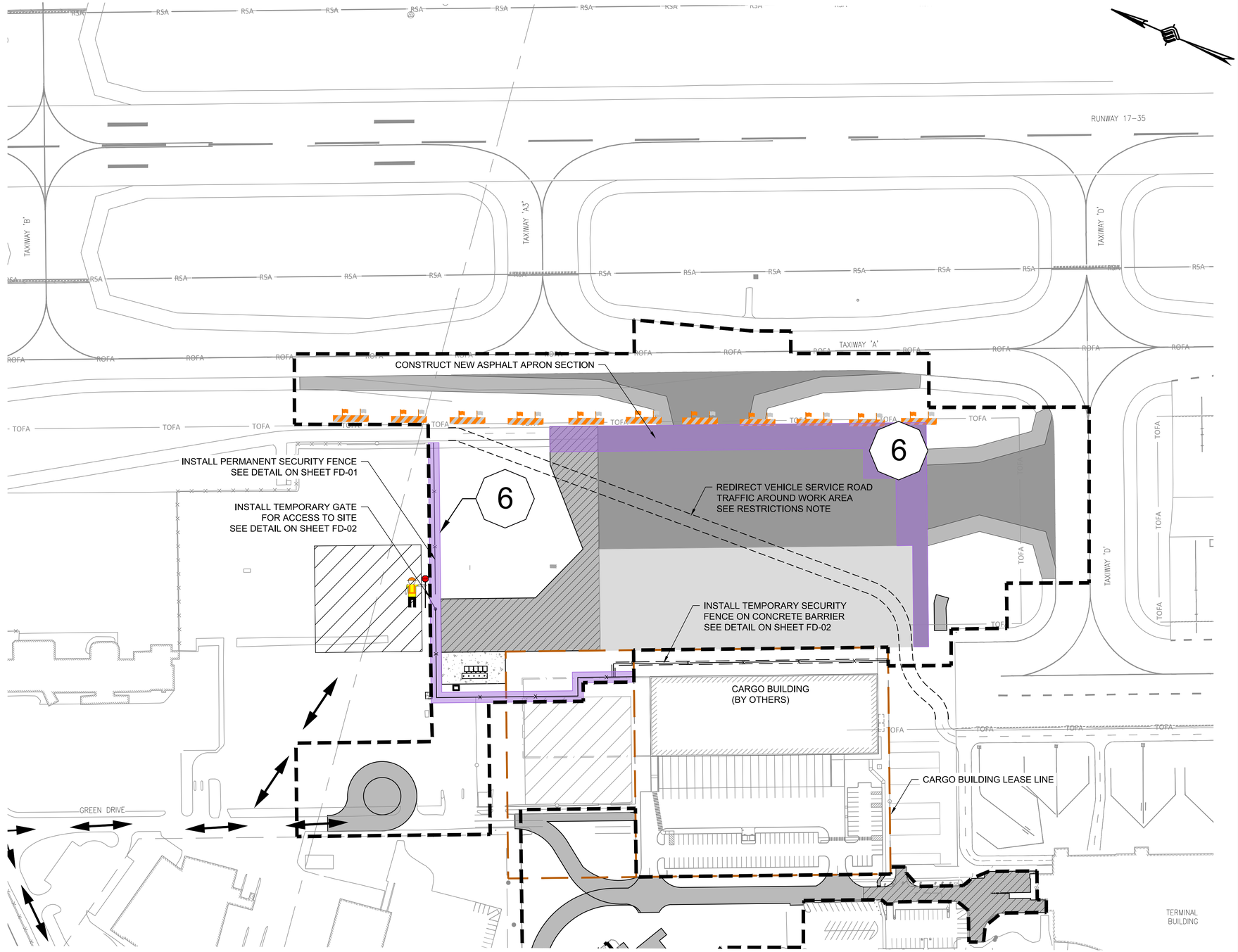
LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- COORDINATE FENCE CONNECTION WITH CARGO BUILDING CONTRACTOR ONCE BUILDING CONSTRUCTION IS COMPLETED
- PERMANENT AND TEMPORARY SECURITY FENCE PORTIONS MUST BE INSTALLED PRIOR TO COMPLETION OF APRON CONSTRUCTION WORK WITHIN THIS WORK AREA
- ANY TEMPORARY RELOCATION OF THE VEHICLE SERVICE ROAD SHALL BE DELINEATED USING TRAFFIC CONES WITH A MINIMUM WIDTH OF 20 FEET AND HAVING LONGITUDINAL SPACING NO FURTHER THAN 50 FEET APART TO ALLOW FOR MHT AIRPORT MAINTENANCE AND OTHER VEHICLES TO CONTINUE USING A PORTION OF THE CONSTRUCTION ZONE DURING THE CONSTRUCTION. CONTRACTOR SHALL TAKE CARE TO AVOID ANY TRAFFIC CONFLICTS WHEN CROSSING THIS TEMPORARY VEHICLE SERVICE ROAD.
- CONTRACTOR MUST COMPLETE WORK AREA 5B PRIOR TO COMMENCEMENT OF WORK AREA 6.

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. SECURITY FENCE INSTALLATION
3. INSTALL TEMPORARY GATE FOR SITE ACCESS
4. COORDINATION RELOCATION OF SECURITY FENCE WITH MHT OPERATIONS AND RPR. MHT ACM AND ASP NEED TO BE UPDATED AND APPROVED BY FAA AND TSA PRIOR TO CONSTRUCTION
5. INSTALL TEMPORARY SECURITY FENCE ON CONCRETE BARRIER
6. PAVEMENT REMOVAL
7. UNCLASSIFIED EXCAVATION
8. DRAINAGE IMPROVEMENTS
9. SUBBASE AND BASE COURSE INSTALLATION
10. PAVING OPERATIONS
11. TOPSOIL, SEED, MULCH



LEGEND:

- 6 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- RUNWAY DELINEATION CONE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA

0 100 200 300 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301–5022
PH: 603–225–2978 FAX: 603–225–0095
DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN – WORK AREA 6

SCALE: 1" = 100' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3–33–0011–XXX–2021

DRAWING NO.
CS–06

SHEET 11 OF 90
REV

WORK AREA 7

DESCRIPTION: INCLUDES ALL WORK NEEDED TO CONSTRUCT THE TAXILANE STUB WHICH CONNECTS TAXIWAY A TO THE NEW APRON.

DURATION: 25 CONSECUTIVE CALENDAR DAYS

CLOSURES: TAXIWAY A (BETWEEN TW B & TW D)
TAXIWAY A3

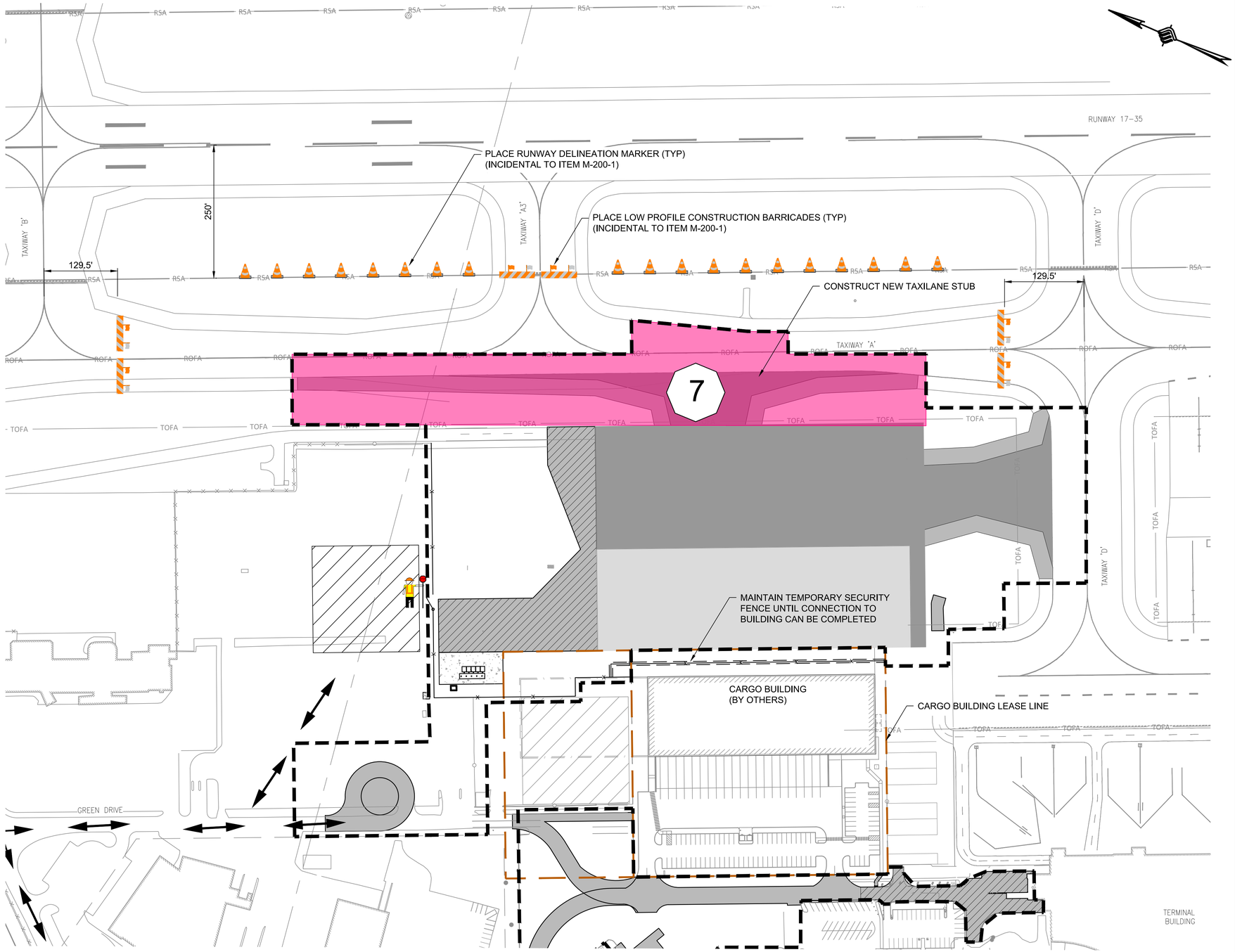
LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- EDGE LIGHTS AND AIRFIELD GUIDANCE SIGNS WITHIN THE WORK AREA OR DIRECTING TRAFFIC INTO WORK AREA SHALL BE DISCONNECTED OR COVERED.
- PLACE BARRICADES A MINIMUM OF 129.5 FEET FROM OPEN TAXIWAY CENTERLINE
- PLACE RSA DELINEATION CONES A MINIMUM OF 250' FROM OPEN RUNWAY CENTERLINE
- CONTRACTOR TO PLACE BARRICADES AND CONES PRIOR TO COMMENCEMENT OF WORK AREA 6.
- CONTRACTOR MUST COMPLETE WORK AREA 6 PRIOR TO COMMENCEMENT OF WORK AREA 7.

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. PAVEMENT REMOVAL
3. UNCLASSIFIED EXCAVATION
4. DRAINAGE IMPROVEMENTS
5. TAXIWAY EDGE LIGHT INSTALLATION
6. TAXIWAY CENTERLINE LIGHT INSTALLATION
7. GUIDANCE SIGN INSTALLATION
8. SUBBASE AND BASE COURSE INSTALLATION
9. PAVING OPERATIONS
10. TOPSOIL, SEED, MULCH



LEGEND:

- 7 — WORK AREA
- STAGING AREA
- HAUL ROUTE
- RUNWAY DELINEATION CONE
- BARRICADES
- GATE GUARD
- TOTAL PROJECT WORK AREA

0 100 200 300 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095
DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN – WORK AREA 7

SCALE: 1" = 100' | DATE: MARCH 2022

REVISIONS

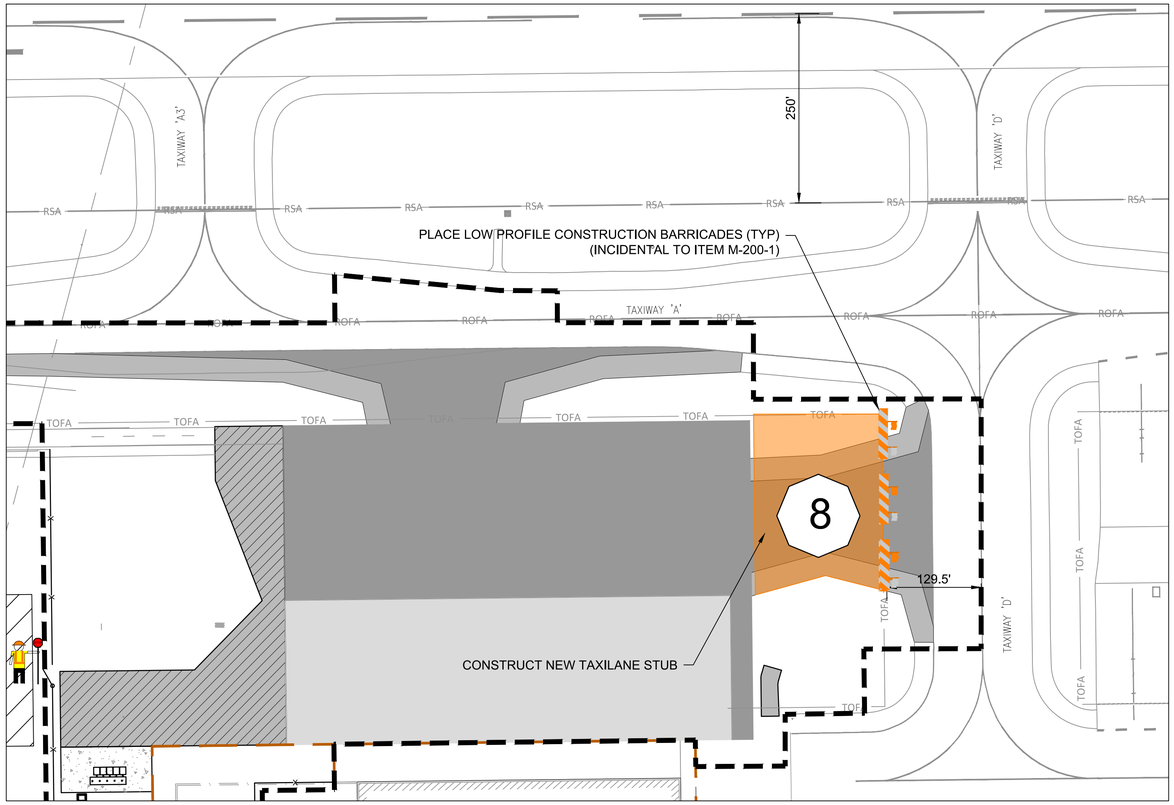
REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-07

SHEET 12 OF 90
REV

WORK AREA 8, 8A & 8B WILL OCCUR IF ADD ALTERNATE 4 IS AWARDED



WORK AREA 8

DESCRIPTION: INCLUDES ALL WORK OUTSIDE THE TOFA LIMITS NEEDED TO CONSTRUCT THE TAXILANE STUB WHICH CONNECTS TAXIWAY D TO THE NEW APRON.

DURATION: 15 CONSECUTIVE CALENDAR DAYS

CLOSURES: N/A

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

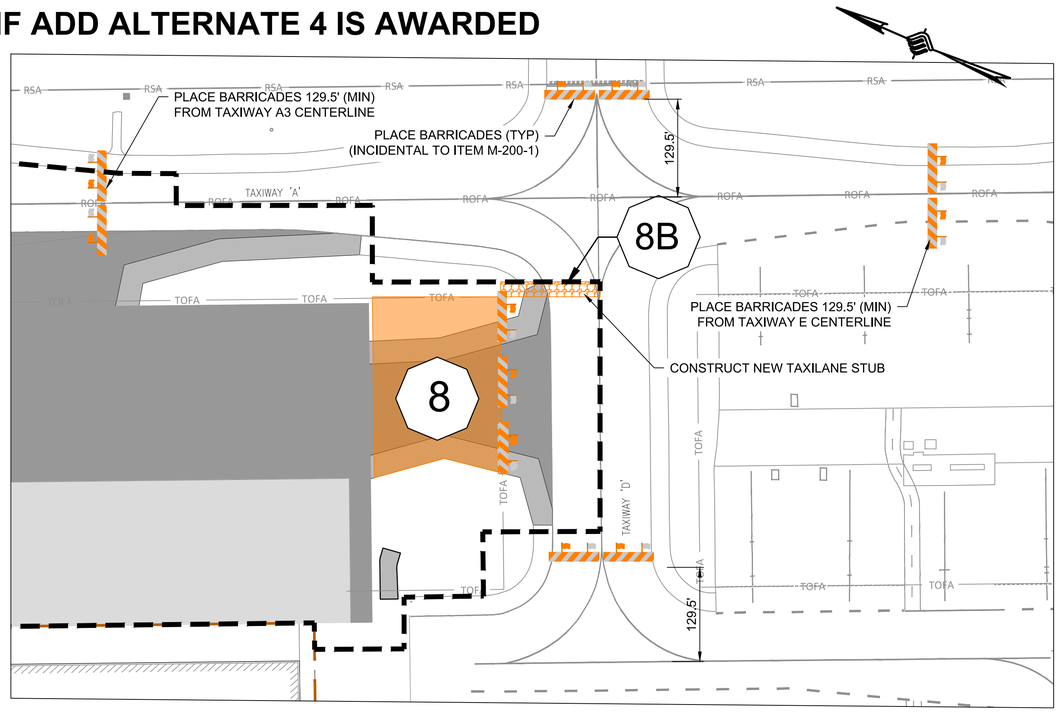
- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- PLACE BARRICADES A MINIMUM OF 129.5' FROM OPEN TAXIWAY CENTERLINE PRIOR TO COMMENCEMENT OF WORK AREA 8
- EDGE LIGHTS AND AIRFIELD GUIDANCE SIGNS WITHIN THE WORK AREA OR DIRECTING TRAFFIC INTO WORK AREA SHALL BE DISCONNECTED OR COVERED.
- CONTRACTOR MUST COMPLETE WORK AREA 7 PRIOR TO COMMENCEMENT OF WORK AREA 8

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. UNCLASSIFIED EXCAVATION
3. DRAINAGE IMPROVEMENTS
4. TAXIWAY EDGE LIGHTS AND GUIDANCE SIGN INSTALLATION
5. SUBBASE AND BASE COURSE INSTALLATION
6. PAVING OPERATIONS
7. TOPSOIL, SEED, MULCH

LEGEND:

8	WORK AREA		BARRICADES
	STAGING AREA		GATE GUARD
	HAUL ROUTE		TOTAL PROJECT WORK AREA
	RUNWAY DELINEATION CONE		



WORK AREA 8B

DESCRIPTION: INCLUDES ALL WORK WITHIN THE TAXIWAY A OBJECT FREE AREA NEEDED TO CONSTRUCT THE TAXILANE STUB WHICH CONNECTS TAXIWAY D TO THE NEW APRON.

DURATION: 3 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 7 DURATION

CLOSURES: TAXIWAY A (BETWEEN TW A3 & TW E)
TAXIWAY D

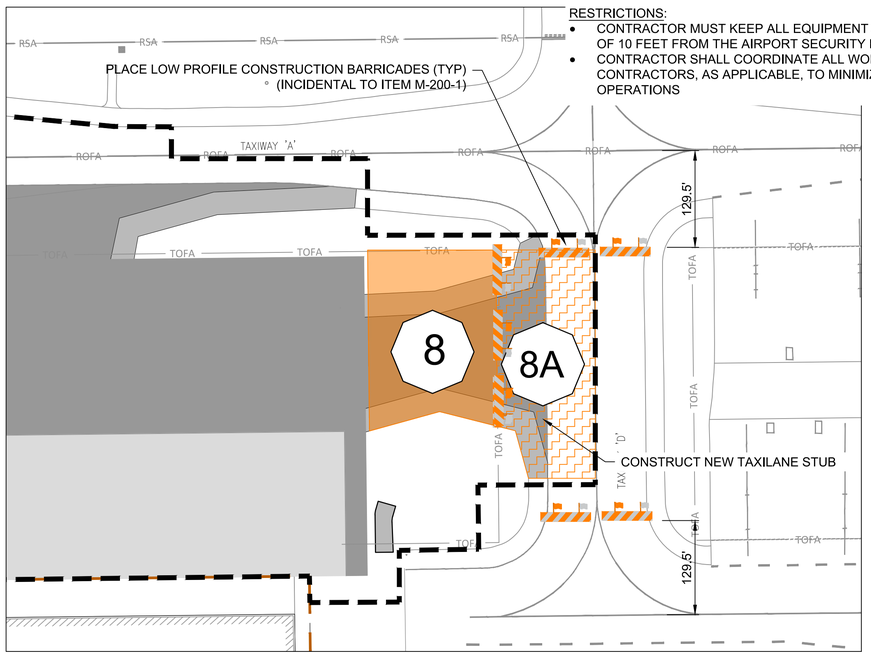
LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- PLACE BARRICADES A MINIMUM OF 129.5 FEET FROM OPEN TAXIWAY CENTERLINE PRIOR TO COMMENCEMENT OF WORK AREA 8B
- EDGE LIGHTS AND AIRFIELD GUIDANCE SIGNS WITHIN THE WORK AREA OR DIRECTING TRAFFIC INTO WORK AREA SHALL BE DISCONNECTED OR COVERED.
- WORK AREAS 8A & 8B MAY NOT BE WORKED ON CONCURRENTLY

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. PAVEMENT REMOVAL
3. UNCLASSIFIED EXCAVATION
4. DRAINAGE IMPROVEMENTS
5. TAXIWAY EDGE LIGHT INSTALLATION
6. SUBBASE AND BASE COURSE INSTALLATION
7. PAVING OPERATIONS
8. TOPSOIL, SEED, MULCH



WORK AREA 8A

DESCRIPTION: INCLUDES ALL WORK WITHIN THE TAXIWAY D OBJECT FREE AREA NEEDED TO CONSTRUCT THE TAXILANE STUB WHICH CONNECTS TAXIWAY D TO THE NEW APRON.

DURATION: 5 CONSECUTIVE CALENDAR DAYS WITHIN WORK AREA 7 DURATION

CLOSURES: TAXIWAY D (WEST OF TW A)

LIQUIDATED DAMAGES: REFER TO CONTRACT DOCUMENTS

RESTRICTIONS:

- CONTRACTOR MUST KEEP ALL EQUIPMENT AND PERSONNEL A MINIMUM OF 10 FEET FROM THE AIRPORT SECURITY FENCE
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS, AS APPLICABLE, TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS
- PLACE BARRICADES A MINIMUM OF 129.5 FEET FROM OPEN TAXIWAY CENTERLINE PRIOR TO COMMENCEMENT OF WORK AREA 8A
- EDGE LIGHTS AND AIRFIELD GUIDANCE SIGNS WITHIN THE WORK AREA OR DIRECTING TRAFFIC INTO WORK AREA SHALL BE DISCONNECTED OR COVERED
- WORK AREAS 8A & 8B MAY NOT BE WORKED ON CONCURRENTLY

PRIMARY WORK TO BE COMPLETED:

1. EROSION CONTROL BMP INSTALLATION
2. PAVEMENT REMOVAL
3. UNCLASSIFIED EXCAVATION
4. DRAINAGE IMPROVEMENTS
5. TAXIWAY EDGE LIGHT AND GUIDANCE SIGN INSTALLATION
6. SUBBASE AND BASE COURSE INSTALLATION
7. PAVING OPERATIONS
8. TOPSOIL, SEED, MULCH

0 100 200 300 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: BRF
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONSTRUCTION SAFETY AND PHASING
PLAN - WORK AREAS 8, 8A & 8B

SCALE: 1" = 100'
DATE: MARCH 2022

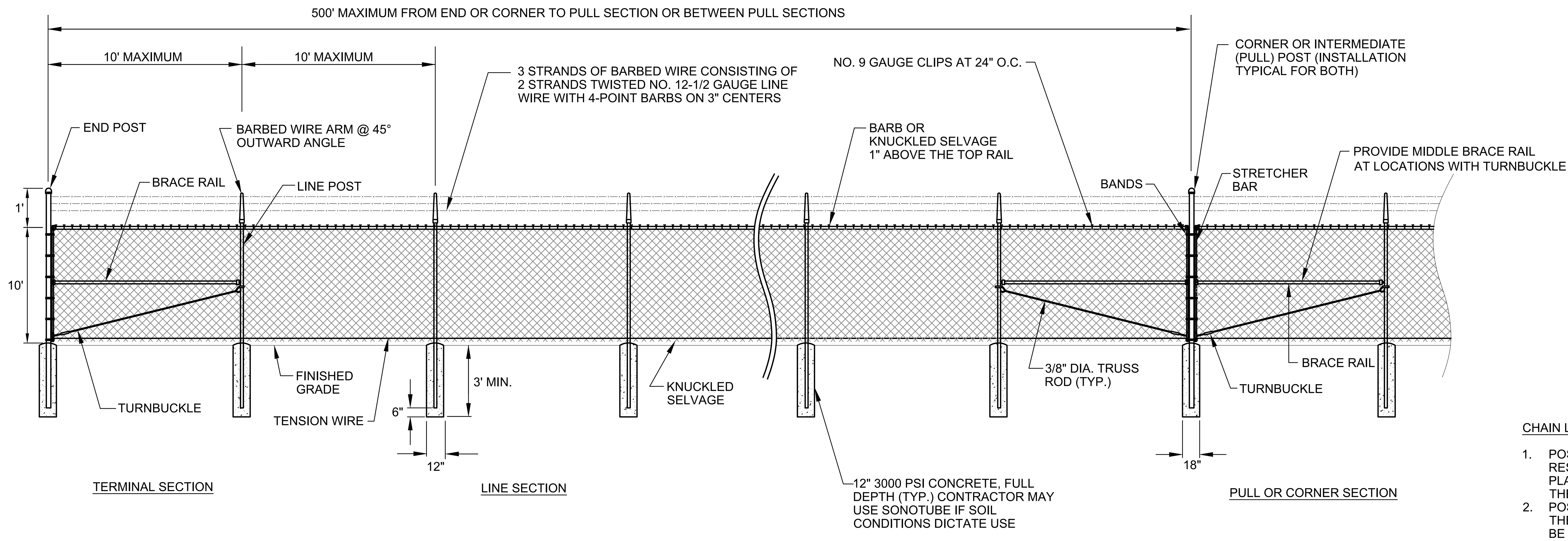
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CS-08

SHEET 13 OF 90
REV



PERMANENT SECURE AIRFIELD 10FT HIGH CHAIN LINK FENCE WITH BARB WIRE DETAIL

NOT TO SCALE
(ITEM F-162-5.1A)

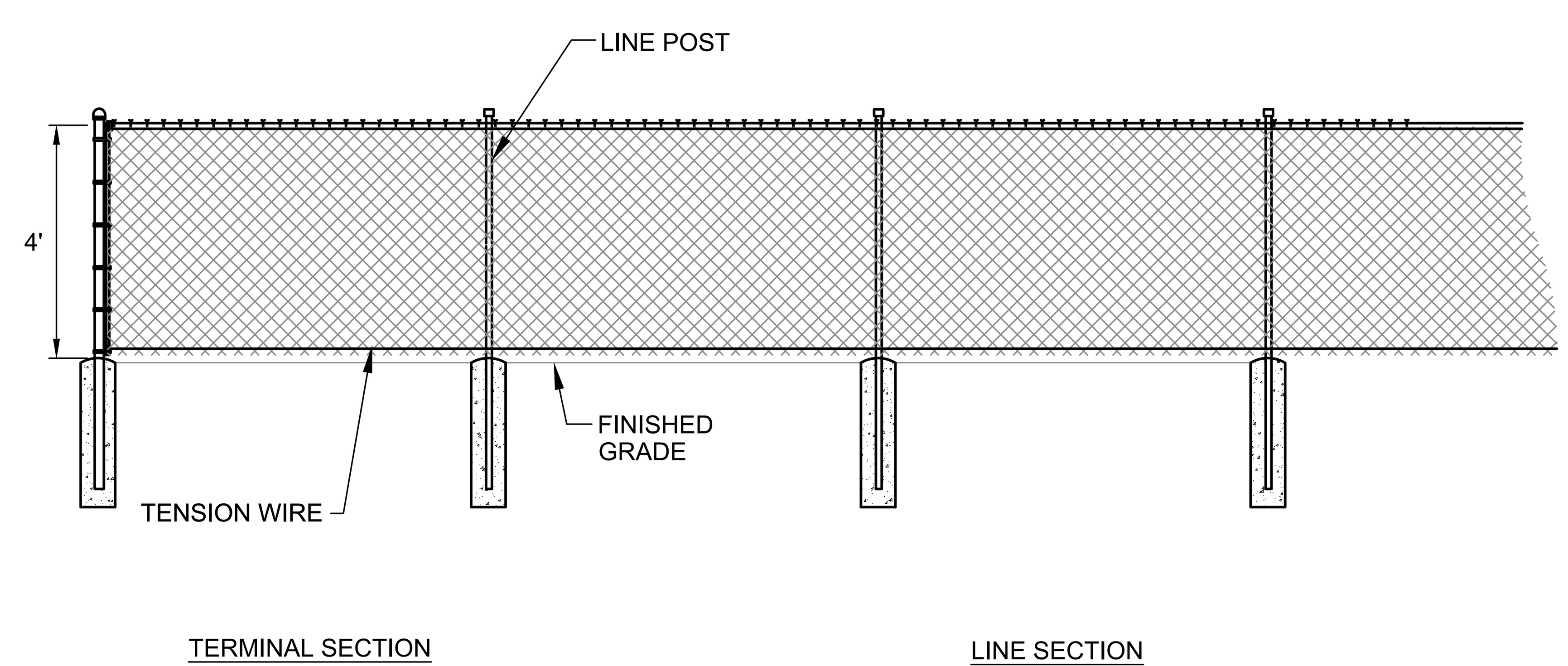
POST AND RAIL SCHEDULE

USE	MATERIAL	FED SPEC RR-F-191-3 SIZE	STEEL O.D. (INCHES)
END CORNER AND INTERMEDIATE POSTS FOR FENCES LESS THAN 8'	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP4	2.875
BRACE RAILS FOR FENCES 6' AND OVER	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP1	1.66
TOP RAIL	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP1	1.66
LINE POSTS FOR FENCES GREATER THAN 6' AND EQUAL TO OR LESS THAN 8'	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP3	2.375
GATE POSTS	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP5	4.00

NOTE: ALL POSTS AND RAILS TO BE GALVANIZED TUBULAR STEEL PIPE

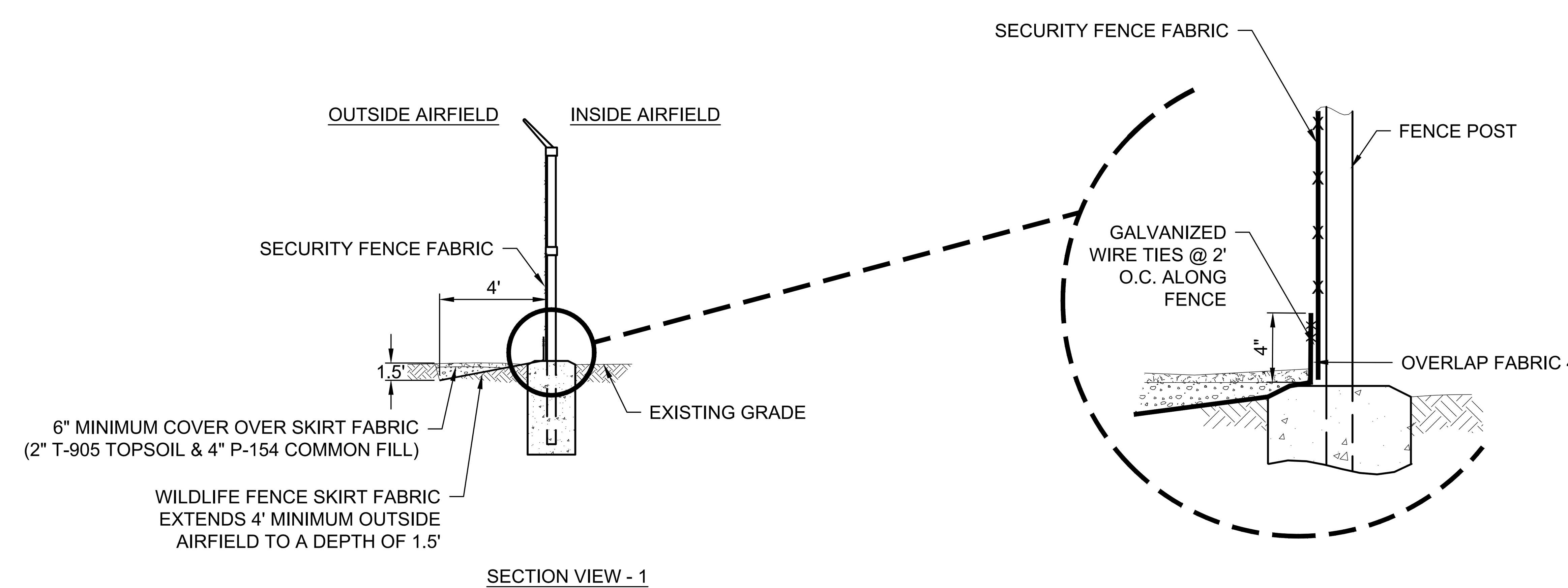
CHAIN LINK FENCE NOTES:

1. POSTS, INCLUDING ENCASEMENT SHALL BE SET AS SHOWN ON THE PLANS OR AS DIRECTED BY THE RESIDENT PROJECT REPRESENTATIVE (RPR). WHEN DIRECTED BY THE RPR THE FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE POSTS SO THAT THE FABRIC CAN BE PULLED TIGHT AGAINST THE POSTS.
2. POSTS IN ROCK - WHERE SUBSTANTIAL ROCK IS ENCOUNTERED, A HOLE 2" LARGER IN DIAMETER THAN THE POST, AND 12" MINIMUM DEPTH FOR LINE POSTS, AND 18" MINIMUM FOR ALL OTHER POSTS SHALL BE MADE. AFTER INSERTING THE POSTS, THE HOLES ARE TO BE BACKFILLED WITH A HAND MIXED MORTAR CONSISTING OF ONE PART PORTLAND CEMENT TWO PARTS FINE AGGREGATE MIXED TO A PLASTIC CONSISTENCY SHOWING NO SIGNS OF FREE WATER. THE HAND MIXING AND CONSOLIDATION OF THE MORTAR SHALL BE PERFORMED IN A MANNER APPROVED BY THE RPR.
3. CORNER POSTS SHALL BE USED AT SHARP BREAKS IN VERTICAL GRADE AND CHANGES IN HORIZONTAL ALIGNMENT OF 15' AND OVER. PULL POSTS SHALL BE USED 500' ON STRAIGHT RUNS OF CHAIN LINK FENCE OR AS DIRECTED BY THE RPR.
4. THE CONTRACTOR SHALL SUBMIT THE DETAILS FOR THE CHAIN LINK FENCE PROPOSED TO BE ERECTED TO THE ENGINEER. NO FENCE SHALL BE ERECTED PRIOR TO THE APPROVAL OF THE VARIOUS DETAILS.
5. TENSION WIRE SHALL BE FASTENED TO EACH POST IN A MANNER APPROVED BY THE RPR.
6. THE FENCE SHALL BE GROUND EVERY 500' AS SHOWN ON THE PLANS OR AS DIRECTED BY THE RPR. THE GROUND SHALL BE ACCOMPLISHED WITH A 8' COPPER CLAD ROD MINIMUM OF 5/8" DIAMETER DRIVEN VERTICALLY UNTIL THE TOP IS 6 INCHES BELOW THE GROUND SURFACE. A NO. 6 SOLID COPPER CONDUCTOR SHALL BE CLAMPED TO THE RODS AND TO THE FENCE IN SUCH A MANNER THAT EACH ELEMENT OF THE FENCE IS GROUNDED. GROUNDING INCIDENTAL TO FENCE INSTALLATION.
7. GROUND RODS SHALL BE INSTALLED IN ALL LOCATIONS WHERE POWER LINES CROSS OVER FENCE.
8. INSTALL WILDLIFE SKIRT ON FENCE SECTIONS BEING INSTALLED IN GRASS. SEE DETAIL THIS SHEET.



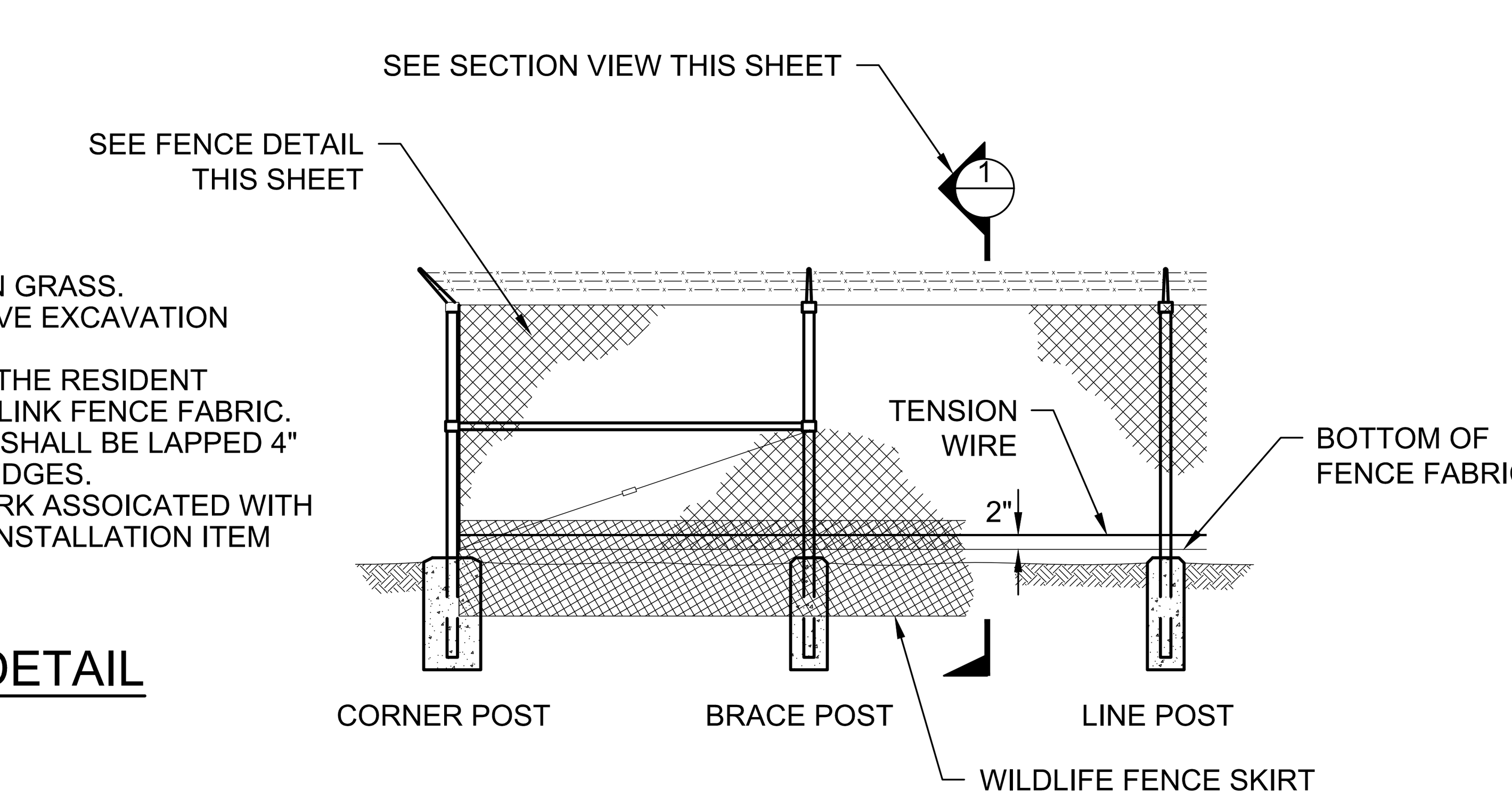
PERMANENT 4FT CHAIN LINK FENCE DETAIL

NOT TO SCALE
(ITEM F-162-5.1B)



WILDLIFE SKIRT NOTES:

1. INSTALL WILDLIFE SKIRT ON FENCE SECTIONS BEING INSTALLED IN GRASS.
2. MAINTAIN SECURITY FENCE INTEGRITY AT ALL TIMES. DO NOT LEAVE EXCAVATION UNDER FENCE FABRIC THAT WOULD PERMIT ACCESS.
3. DEPTH OF EXCAVATION SHALL BE INSPECTED AND APPROVED BY THE RESIDENT PROJECT REPRESENTATIVE PRIOR TO PLACEMENT OF THE CHAIN LINK FENCE FABRIC.
4. END JOINTS BETWEEN ADJACENT SECTIONS OF THE WIRE FABRIC SHALL BE LAPPED 4" AND TIED WITH GALVANIZED WIRE TIES AT 2' ON CENTER AND AT EDGES.
5. WILDLIFE SKIRT FABRIC, TIES, FILL MATERIAL, AND ALL OTHER WORK ASSOICATED WITH THE SKIRT INSTALLATION IS CONSIDERED INCIDENTAL TO FENCE INSTALLATION ITEM F-162-5.1A.



SECURITY FENCE WILDLIFE SKIRT DETAIL

NOT TO SCALE
(INCIDENTAL TO ITEM F-162-5.1A)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE BRIAN M. BENNETT No. 7416 LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095
DESIGNED BY DPB
DRAWN BY BRF
CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

FENCE DETAILS (1 OF 2)

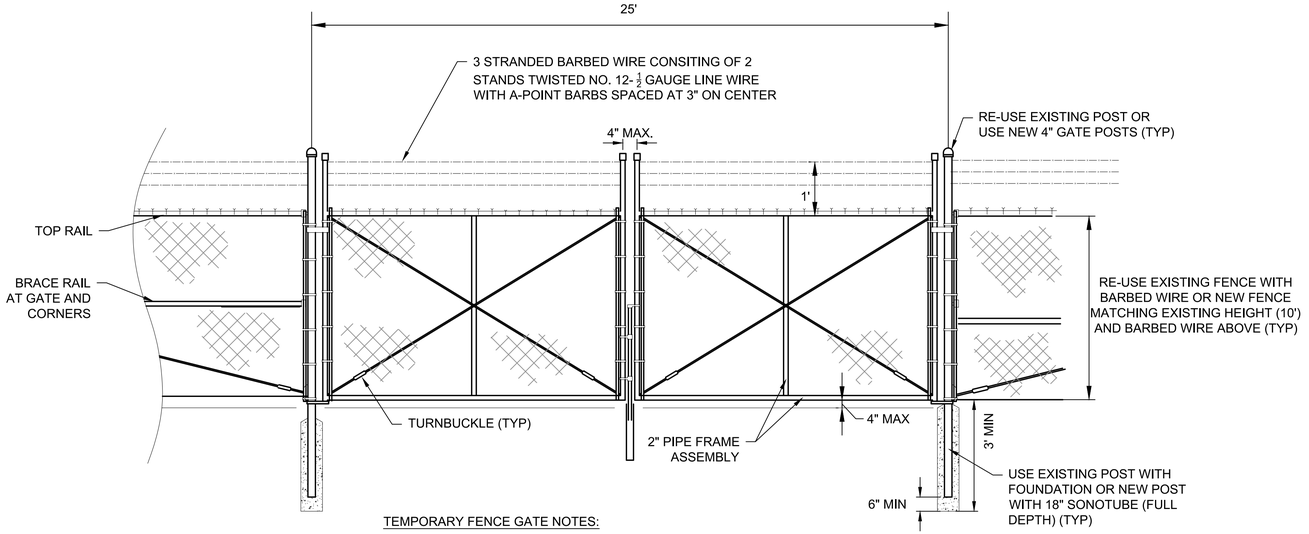
SCALE: NTS
DATE: MARCH 2022

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
FD–01

REV



TEMPORARY FENCE GATE NOTES:

1. GATE FABRIC SHALL MATCH FENCE FABRIC. BARBED WIRE ON GATES SHALL MATCH THAT USED ON THE FENCE.
2. A COMBINATION PADLOCK SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL HAVE THE SAME MHT STANDARD LOCK. PADLOCK TYPE MUST BE APPROVED BY AIRPORT. THE LOCK SHALL BE CONSIDERED INCIDENTAL TO THE FENCE GATE ITEM F-162-5.2A.
3. ALL DOUBLE SWING GATES SHALL HAVE THE CAPABILITY OF SWINGING IN BOTH DIRECTIONS WITH STOPS ON BOTH SIDES.

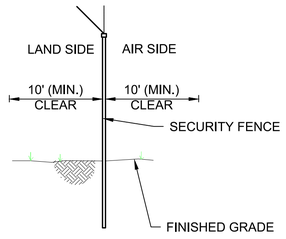
TEMPORARY CHAIN LINK FENCE GATE DETAIL

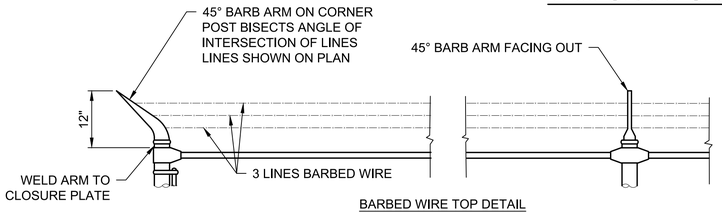
NOT TO SCALE
(ITEM F-162-5.2A)

POST AND RAIL SCHEDULE

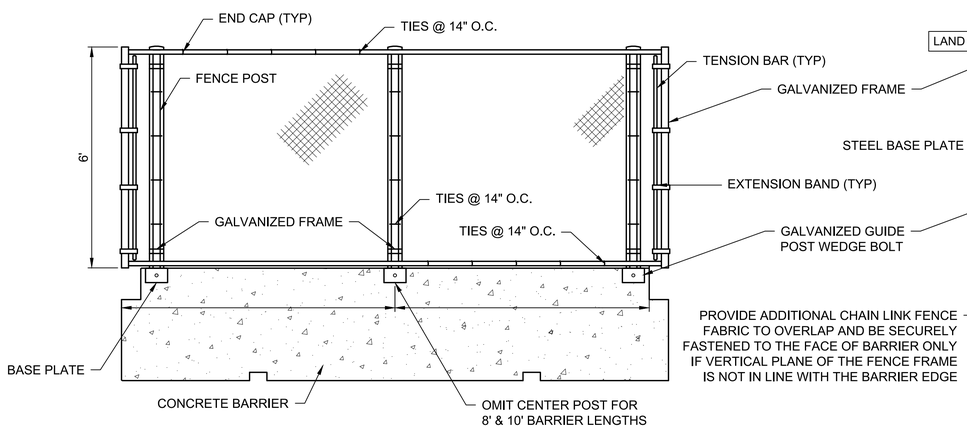
USE	MATERIAL	FED SPEC RR-F-191-3 SIZE	STEEL O.D. (INCHES)
END CORNER AND INTERMEDIATE POSTS FOR FENCES LESS THAN 8'	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP4	2.875
BRACE RAILS FOR FENCES 6' AND OVER	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP1	1.66
TOP RAIL	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP1	1.66
LINE POSTS FOR FENCES GREATER THAN 6' AND EQUAL TO OR LESS THAN 8'	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP3	2.375
GATE POSTS	CLASS 1 (STEEL) GRADE B, GROUP 1C	SP5	4.00

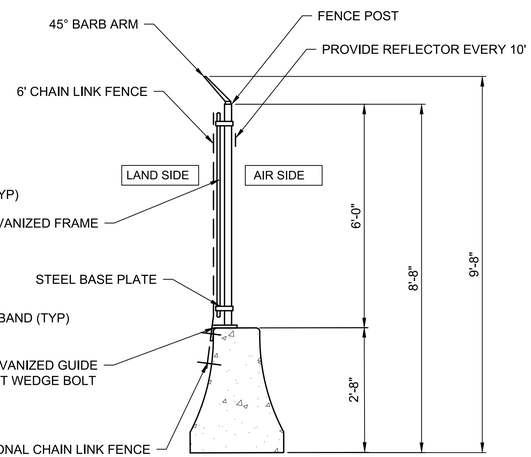
NOTE: ALL POSTS AND RAILS TO BE GALVANIZED TUBULAR STEEL PIPE





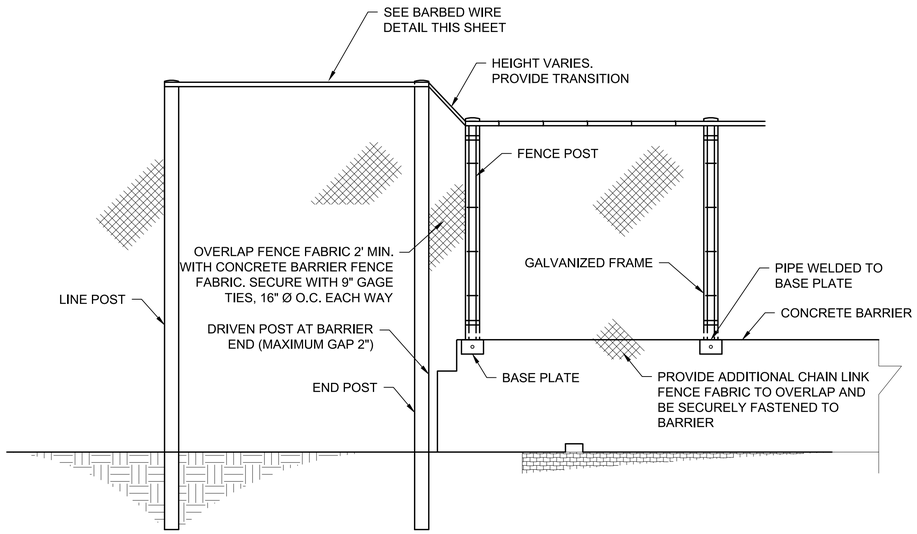
BARBED WIRE TOP DETAIL





TEMPORARY SECURE AIRFIELD 6FT CHAIN LINK FENCE WITH BARB WIRE ON CONCRETE BARRIER DETAIL

NOT TO SCALE
(ITEM F-162-5.1C)



TEMPORARY FENCE ON CONCRETE BARRIER TO PERMANENT FENCE TRANSITION DETAIL

NOT TO SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

FENCE DETAILS (2 OF 2)

SCALE: NTS | DATE: MARCH 2022

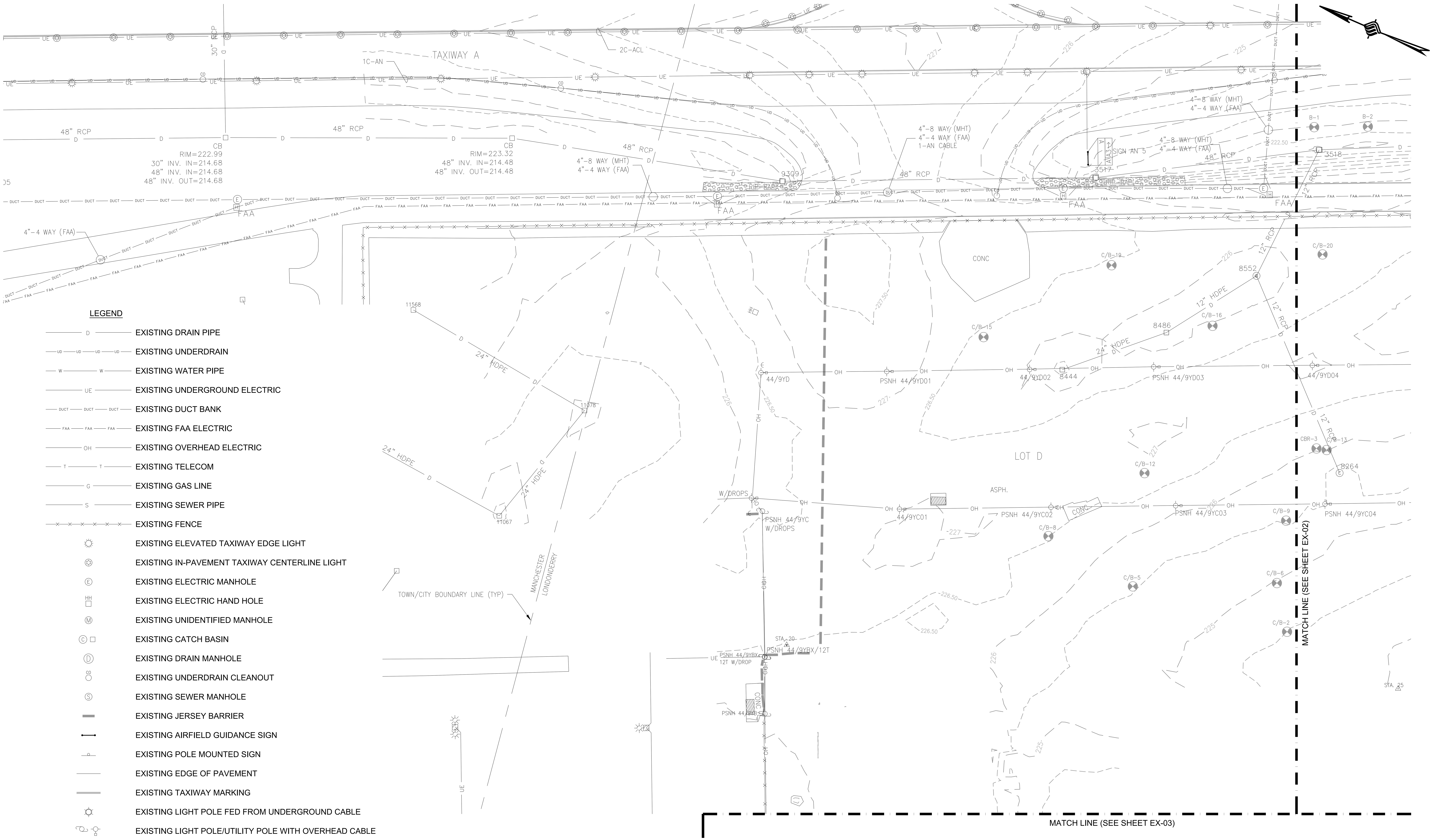
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
FD-02

SHEET 15 OF 90 | REV



LEGEND

—— D ——	EXISTING DRAIN PIPE
— UD — UD — UD — UD —	EXISTING UNDERDRAIN
— W —— W ——	EXISTING WATER PIPE
—— UE ——	EXISTING UNDERGROUND ELECTRIC
— DUCT — DUCT — DUCT —	EXISTING DUCT BANK
— FAA — FAA — FAA —	EXISTING FAA ELECTRIC
—— OH ——	EXISTING OVERHEAD ELECTRIC
— T —— T ——	EXISTING TELECOM
—— G ——	EXISTING GAS LINE
—— S ——	EXISTING SEWER PIPE
—×—×—×—×—×—	EXISTING FENCE
	EXISTING ELEVATED TAXIWAY EDGE LIGHT
	EXISTING IN-PAVEMENT TAXIWAY CENTERLINE LIGHT
Ⓔ	EXISTING ELECTRIC MANHOLE
HH	EXISTING ELECTRIC HAND HOLE
Ⓜ	EXISTING UNIDENTIFIED MANHOLE
Ⓒ □	EXISTING CATCH BASIN
Ⓓ	EXISTING DRAIN MANHOLE
CO	EXISTING UNDERDRAIN CLEANOUT
Ⓢ	EXISTING SEWER MANHOLE
	EXISTING JERSEY BARRIER
	EXISTING AIRFIELD GUIDANCE SIGN
	EXISTING POLE MOUNTED SIGN
	EXISTING EDGE OF PAVEMENT
	EXISTING TAXIWAY MARKING
	EXISTING LIGHT POLE FED FROM UNDERGROUND CABLE
	EXISTING LIGHT POLE/UTILITY POLE WITH OVERHEAD CABLE
	EXISTING WATER VALVE
S	EXISTING WATER SHUTOFF
— 225 —	EXISTING MAJOR CONTOUR
— — —	EXISTING MINOR CONTOUR
	CORE / BORING LOCATION
]	EXISTING UTILITY LINE CAP
•	EXISTING BOLLARD

NOTES:

1. SEE SHEET BL-01 TO BL-04 FOR BORING LOGS.
2. SEE SHEET EX-05 FOR DRAINAGE STRUCTURE INFORMATION.
3. EXISTING CONDITIONS PLANS ARE BASED ON A DETAILED FIELD SURVEY PERFORMED BY GM2 ASSOCIATES BETWEEN MARCH AND NOVEMBER 2021. THE FIELD SURVEY PLANS HAVE BEEN SUPPLEMENTED WITH RECORD INFORMATION AND REFERENCE PLANS PROVIDED BY MHT. CONTRACTOR TO FIELD VERIFY INFORMATION SHOWN ON PLANS.
4. HORIZONTAL AND VERTICAL DATUM BASED ON MHT GEODETIC CONTROL, PAC & SAC POINTS.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
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MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

EXISTING CONDITIONS PLAN (1 OF 5)

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EX-01

SHEET 16 OF 90
REV

MATCH LINE (SEE SHEET EX-01)

TAXIWAY A

TAXIWAY D

TAXIWAY G

LOT D

SERVICE ROAD

1C-AN

2C-ACL

2C-AN

SIGN AN 10

SIGN AN 12

4"-8 WAY (MHT)
1-G CABLES
1-FAA CABLE

4"-4 WAY (MHT)

48" RCP

24" RCP

18" RCP

12" RCP

30" RCP

CB
RIM=219.36
6" INV. IN=217.28
48" INV. IN=211.38
48" INV. OUT=211.18

44/9YD04

PSNH 44/9YD05

44/9YD06

PSNH 44/9YD07

PSNH 44/9YC04

44/9YC05

PSNH 44/9YC06

44/9YC07

ELEC CABINET

CONC

USE CAUTION ONE WAY TO ACT

SEE INSET A THIS SHEET

MATCH LINE (SEE SHEET EX-03)

INSET A - EXISTING ASOS

SCALE: 1" = 20'

ASOS ACCESS ROAD
CRUSHED STONE PAD
ANTENNA
ELEVATED GENERATOR ON POSTS
CONCRETE PAD
POWER CABINET/DISCONNECT MOUNTED ON POSTS
WIND TOWER
CONCRETE PAD
BOLLARD (TYP)
UNDERGROUND LIQUID PROPANE TANK
ELEVATED CABLE RACEWAY

NOTES:

① RAIN SENSOR
② TEMPERATURE/DEWPOINT SENSOR
③ PRECIPITATION IDENTIFICATION SENSOR
④ DATA COLLECTOR CABINET
⑤ CEILOMETER
⑥ FREEZING RAIN SENSOR
⑦ VISIBILITY SENSOR

NOTES:
1. SEE SHEET EX-01.

LEGEND

- EXISTING DRAIN PIPE
- EXISTING UNDERDRAIN
- EXISTING WATER PIPE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING DUCT BANK
- EXISTING FAA ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELECOM
- EXISTING GAS LINE
- EXISTING SEWER PIPE
- EXISTING FENCE
- EXISTING ELEVATED TAXIWAY EDGE LIGHT
- EXISTING IN-PAVEMENT TAXIWAY CENTERLINE LIGHT
- EXISTING ELECTRIC MANHOLE
- EXISTING UNIDENTIFIED MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING SEWER MANHOLE
- EXISTING JERSEY BARRIER
- EXISTING AIRFIELD GUIDANCE SIGN
- EXISTING POLE MOUNTED SIGN
- EXISTING EDGE OF PAVEMENT
- EXISTING TAXIWAY MARKING
- EXISTING LIGHT POLE FED FROM UNDERGROUND CABLE
- EXISTING LIGHT POLE/UTILITY POLE WITH OVERHEAD CABLE
- EXISTING WATER VALVE
- EXISTING WATER SHUTOFF
- 225 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- CORE / BORING LOCATION
- EXISTING UTILITY LINE CAP
- EXISTING BOLLARD

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
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DRAWN BY RHL
CHECKED BY BMB

CITY OF MANCHESTER
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MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

EXISTING CONDITIONS PLAN (2 OF 5)

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EX-02

SHEET 17 OF 90
REV

MATCH LINE (SEE SHEET EX-01)

MATCH LINE (SEE SHEET EX-02)

MATCH LINE (SEE INSET A ON SHEET EX-04)

MATCH LINE (SEE SHEET EX-04)

NOTES:
1. SEE SHEET EX-01.

LEGEND

- EXISTING DRAIN PIPE
- EXISTING UNDERDRAIN
- EXISTING WATER PIPE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING DUCT BANK
- EXISTING FAA ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELECOM
- EXISTING GAS LINE
- EXISTING SEWER PIPE
- EXISTING FENCE
- EXISTING ELEVATED TAXIWAY EDGE LIGHT
- EXISTING IN-PAVEMENT TAXIWAY CENTERLINE LIGHT
- EXISTING ELECTRIC MANHOLE
- EXISTING UNIDENTIFIED MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING SEWER MAHOLE
- EXISTING JERSEY BARRIER
- EXISTING AIRFIELD GUIDANCE SIGN
- EXISTING POLE MOUNTED SIGN
- EXISTING EDGE OF PAVEMENT
- EXISTING TAXIWAY MARKING
- EXISTING LIGHT POLE FED FROM UNDERGROUND CABLE
- EXISTING LIGHT POLE/UTILITY POLE WITH OVERHEAD CABLE
- EXISTING WATER VALVE
- EXISTING WATER SHUTOFF
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- CORE / BORING LOCATION
- EXISTING UTILITY LINE CAP
- EXISTING BOLLARD

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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DESIGNED BY: DPB
DRAWN BY: RHL
CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

EXISTING CONDITIONS PLAN (3 OF 5)

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EX-03

SHEET 18 OF 90
REV

MATCH LINE (SEE SHEET EX-03)

AMMON DRIVE

FREUDENBERG LEASE LINE

LOT C

MANCHESTER LONDONDERRY

MATCH LINE (SEE SHEET EX-03)

INSET A
SCALE: 1" = 40'

NOTES:
1. SEE SHEET EX-01.

0 40 80 120 FT
SCALE

LEGEND

- EXISTING DRAIN PIPE
- EXISTING UNDERDRAIN
- EXISTING WATER PIPE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING DUCT BANK
- EXISTING FAA ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELECOM
- EXISTING GAS LINE
- EXISTING SEWER LINE
- EXISTING FENCE
- EXISTING ELEVATED TAXIWAY EDGE LIGHT
- EXISTING IN-PAVEMENT TAXIWAY CENTERLINE LIGHT
- EXISTING ELECTRIC MANHOLE
- EXISTING UNIDENTIFIED MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING SEWER MANHOLE
- EXISTING JERSEY BARRIER
- EXISTING AIRFIELD GUIDANCE SIGN
- EXISTING POLE MOUNTED SIGN
- EXISTING EDGE OF PAVEMENT
- EXISTING TAXIWAY MARKING
- EXISTING LIGHT POLE FED FROM UNDERGROUND CABLE
- EXISTING LIGHT POLE/UTILITY POLE WITH OVERHEAD CABLE
- EXISTING WATER VALVE
- EXISTING WATER SHUTOFF
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- CORE / BORING LOCATION
- EXISTING UTILITY LINE CAP
- EXISTING BOLLARD

ENGINEER'S SEAL
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MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

EXISTING CONDITIONS PLAN (4 OF 5)

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EX-04

SHEET 19 OF 90
REV

CB 191
RIM=222.17
INV. 12" HDPE(NE)=218.60
INV. (SE)=HOODED
WATER LEVEL=218.78
SUMP=215.95

CB 279
RIM=223.22
INV.(E)=HOODED
WATER LEVEL=218.77
SUMP=215.22

CB 303
RIM=222.50
INV. (NW)=HOODED
INV. (SE)=HOODED
INV. (SE)=HOODED
WATER LEVEL=218.84
SUMP=215.21

CB 321
RIM=221.98
INV. (NW)=HOODED
WATER LEVEL=218.84
SUMP=215.21

CB 633
RIM=222.30
INV. 12" RCP(N)=216.93
INV. 12" RCP(SE)=216.95
SUMP=216.30

CB 659
RIM=223.37
INV. 15" RCP(NE)=218.54
SUMP=216.57

CB 913
RIM=221.51
INV. (NW)=HOODED
INV. 12" HDPE(SE)=217.98
WATER LEVEL=217.98
SUMP=214.99

CB 966
RIM=221.63
INV. 12" HDPE(NW)=217.84
INV. (SE)=HOODED
WATER LEVEL=217.80
SUMP=214.71

CB 1100
RIM=220.32
INV. 15" RCP(NW)=216.90
SUMP=216.12

CB 1150
RIM=220.31
INV. 15" RCP(W)=214.70
INV. 15" RCP(E)=214.95
WATER LEVEL=214.89
SUMP FULL

CB 1151
RIM=221.23
INV. 15" RCP(E)=214.83
INV. 15" RCP(W)=214.92
WATER LEVEL=214.92
SUMP=211.89

CB 1263
RIM=222.11
INV. 15" RCP(NW)=216.74
INV. 15" RCP(SE)=216.72
WATER LEVEL=216.72
SUMP=213.38

CB 1333
RIM=221.72
INV. 15" RCP(NW)=217.16
INV. 15" RCP(S)=217.40
WATER LEVEL=217.15
SUMP=216.77

CB 1497
RIM=220.03
INV. 15" RCP(W)=215.32
INV. 15" RCP(SE)=215.43
WATER LEVEL=215.32
SUMP=214.48

CB 1681
RIM=221.40
INV. 15" RCP(SE)=216.38
INV. 15" RCP(W)=216.28
WATER LEVEL=216.26
SUMP=215.34

CB 1793
RIM=221.38
INV. 15" RCP(W)=216.43
SUMP=212.96

CB 1901
RIM=221.15
INV. 15" RCP(NE)=215.72
INV. 15" RCP(S)=215.72
INV. 15" RCP(SW)=215.81
SUMP=213.15

CB 2152
RIM=221.45
INV. 18" RCP(W)=213.25
INV. 15" RCP(E)=214.17
INV. 15" RCP(SE)=214.65
SUMP=210.68

CB 2232
RIM=223.69
INV. 15" RCP(N)=216.84
INV. 8" PVC(NW)=219.19
INV. UNKNOWN(SE)=217.01
SUMP=216.76

CB 2364
RIM=222.20
INV UNKNOWN(NW)=HOODED
WATER LEVEL=217.85
SUMP=251.20

CB 2577
RIM=224.24
INV. 15" RCP(N)=218.27
WATER LEVEL=218.20
SUMP=217.44

CB 3044
RIM=223.01
INV. 18" RCP(N)=216.41
INV. 18" RCP(S)=216.39
INV. 6" PVC(NW)=217.66
SUMP=213.01

CB 3046
RIM=219.41
INV. 48" RCP(NE)=211.91
INV. 48" RCP(SE)=211.71
INV. 8" PERF.(S)=215.31
INV. 30" RCP(W)=213.26
INV. 24" RCP(N)=213.41
SUMP=208.06

CB 3517
RIM=222.82
INV. 48" RCP(N)=212.72
INV. 48" RCP(S)=212.42
SUMP=209.92

CB 3518
RIM=221.90
INV. 48" RCP(N)=212.28
INV. 48" RCP(S)=212.26
SUMP=209.90

CB 3519
RIM=221.82
INV. 48" RCP(N)=211.77
INV. 48" RCP(S)=211.72
SUMP=209.52

CB 5149
RIM=223.70
INV. 12" HDPE(N)=218.50
INV. 12" HDPE(W)=218.64
WATER LEVEL=219.07
SUMP=215.35

CB 5273
RIM=223.37
INV. 12" CMP(N)=220.33
INV. 8" CMP(SW)=220.37
INV. 6"ASB(E)=220.39
WATER LEVEL=220.37
SUMP=218.97

CB 5601
RIM=221.12
INV. 15" RCP(N)=216.43
INV. 15" RCP(SW)=216.45
SUMP=214.02

CB 5741
RIM=223.10
INV. 18" RCP(N)=216.86
INV. 12" RCP(SW)=216.66
SUMP=216.10

CB 5750
RIM=223.34
INV. 24" RCP(NE)=215.87
INV. 18" RCP(S)=215.84
INV. 12" RCP(W)=216.26
SUMP=212.66

CB 5785
RIM=222.67
INV. 12" RCP(N)=216.89
INV. (SE)PLUGGED=217.07
SUMP=216.87

CB 5916
RIM=220.07
INV. 24" RCP(W)=214.52
COULD NOT MEASURE
OTHER PIPES, TOO RECESSED.
SUMP=210.62

CB 6138
RIM=222.31
INV. 8" STEEL(N)=218.90
INV. 8" STEEL(S)=218.67
WATER LEVEL=218.65
SUMP=217.39

CB 6147
RIM=222.41
INV. 8" STEEL(N)=218.63
INV. 15" RCP(E)=217.43
INV.8"STEEL(PLUGGED)=217.40
SUMP=217.16

CB 6168
RIM=222.81
INV. 12" HDPE(N)=218.54
INV. 12" HDPE(E)=218.51
SUMP FULL

CB 6258
RIM=224.20
INV. 12" RCP(W)=217.62
INV. 15" RCP(S)=217.60
SUMP=215.00

CB 6263
RIM=221.40
INV. 15" RCP(SE)=216.38
INV. 15" RCP(W)=216.28
WATER LEVEL=216.26
SUMP=215.34

CB 6264
RIM=220.97
INV. 15" HDPE(NW)=217.43
INV. 15" HDPE(NE)=217.44
INV. 6" PVC(SE)=217.82
WATER LEVEL=218.07
SUMP=216.77

CB 6265
RIM=224.24
INV. 15" RCP(N)=218.27
WATER LEVEL=218.20
SUMP=217.44

CB 6381
RIM=220.98
INV. 15" HDPE(NW)=217.48
INV. 15" HDPE(SE)=217.43
SUMP=214.58

CB 6906
RIM=221.19
INV. 10" PVC(W)=216.65
INV. 10" PVC(E)=216.69
SUMP=215.94

CB 7034
RIM=220.40
INV. 12" RCP(N)=215.13
INV. 24" RCP(E)=215.22
INV. (SE)=HOODED
SUMP=211.28
WATER LEVEL=215.37

CB 7048
RIM=220.53
INV. 18" RCP(E)=215.70
INV. (W)=HOODED
WATER LEVEL=215.65
SUMP=211.50

CB 7112
RIM=220.67
INV. 12" RCP(E)=215.15
INV. 15" RCP(NW)=215.12
INV. (SE)=HOODED
WATER LEVEL=215.07
SUMP=213.13

CB 7121
RIM=221.01
INV. 15" RCP(NE)=216.53
INV. 15" RCP(S)=216.20
SUMP=215.72

CB 7247
RIM=220.47
INV. 12" RCP(W)=216.82
INV. 12" RCP(E)=216.77
SUMP=214.97

CB 7254
RIM=220.95
INV. 8" CMP(NE)=216.35
INV. 12" PVC(E)=216.42
INV. 12" RCP(SE)=216.42
INV. (W)=BLOCKED W/CONC
SUMP=214.84

CB 7259
RIM=220.92
INV. 12" RCP(N)=216.41
INV. 12" PVC(E)=216.42
INV. 12" RCP(W)=216.44
SUMP=215.75

CB 8264
RIM=225.30
INV. 12" RCP(NE)=220.95
SUMP=220.00

CB 8444
RIM=225.34
INV. 24" HDPE(SE)=221.55
SUMP=218.64

CB 8486
RIM=225.51
INV. 24" HDPE(NW)=221.05
INV. 24" HDPE(SE)=221.06
SUMP=218.51

CB 8552
RIM=225.48
INV. 12" HDPE(NW)=221.46
INV. 12" RCP(E)=220.85
INV. 12" RCP(S)=220.73
SUMP=219.48

CB 9309
RIM=223.72
INV. 48" RCP(N)=213.17
INV. 48" RCP(S)=213.10
SUMP=210.57

CB 9572
RIM=220.67
INV. 10" PVC(NW)=217.35
INV. 15" HDPE(SE)=217.41
SUMP=214.92

CB 9578
RIM=220.59
INV. 12" ASB(NE)=216.21
INV. 15" RCP(N)=215.77
INV. (SW)=HOODED
WATER LEVEL=215.75
SUMP=212.64

CB 9935
RIM=220.92
INV.(SE)=HOODED
WATER LEVEL=215.17
SUMP=212.22

CB 9965
RIM=218.92
INV. 12" HDPE(N)=215.52
SUMP=215.27

CB 10086
RIM=219.77
INV. 24" RCP(N)=214.67
INV. 24" RCP(S)=214.62
SUMP=214.12

CB 11067
RIM=224.39
INV. 24" HDPE(N)=219.90
INV. 24" HDPE(SE)=219.89
SUMP=217.64

CB 11078
RIM=224.74
INV. 24" HDPE(NW)=220.39
INV. 24" HDPE(NE)=220.38
SUMP=217.42

CB 11241
RIM=219.10
INV. 12" RCP(W)=215.15
INV. 12" HDPE(S)=215.50
INV. 12" RCP(E)=215.25
SUMP=212.40

CB 11242
RIM=219.84
INV. 12" RCP(E)=215.56
SUMP=214.74

CB 11568
RIM=224.75
INV. 24" RCP(SW)=220.47
SUMP=218.00

CB 11569
RIM=219.30
INV. 12" HDPE(N)=215.80
SUMP=212.80

CB 11570
RIM=220.21
INV. 12" RCP(W)=214.86
COULD NOT OPEN BUT
WERE ABLE TO MEASURE
CONNECTING PIPE

DMH 1427
RIM=222.16
INV. 15" RCP(NW)=215.98
INV. 15" RCP(SE)=216.09

MH 5267
RIM=225.89
FULL OF WATER

DMH 5723
RIM=223.46
INV. 30" RCP(NW)=214.67
INV. 30" RCP(SE)=214.57
INV. 15" RCP(SW)=214.99

DMH 7033
RIM=221.03
INV. 24" RCP(SE)=215.09
INV. 24" RCP(SW)=214.97
SUMP=214.85

DMH 7876
RIM=223.61
INV. 24" RCP(S)=213.95
INV. 24" RCP(NW)=213.98
SUMP=210.71

DMH 8901
RIM=226.10
INV. 24" RCP(NE)=214.62
INV. 24" RCP(SW)=214.42

DMH 9053
RIM=223.52
INV. 48" RCP(N)=211.47
INV. 48" RCP(SW)=211.42
SUMP=210.72

DMH 9569
RIM=223.22
INV, 24" RCP(SE)=214.52
INV. 15" RCP(NE)=215.83
INV. 15" RCP(NW)=214.90
SUMP=211.22

DMH 9576
RIM=220.68
INV. 15" RCP(N)=215.88
INV. 18" RCP(W)=215.80
INV. 8" RCP(E)=215.96
SUMP=210.88

DMH 9577
RIM=222.22
INV. 15" STEEL(E)=217.33
INV. 12" RCP(S)=217.62
INV. 15" RCP(W)=217.22
SUMP=217.11

DMH 9966
RIM=220.74
INV. 12" HDPE(SE)=214.94
INV. 15" HDPE(NW)=214.84
INV. (SW)=HOODED
WATER LEVEL=214.74
SUMP=211.64

SMH 1902
RIM=224.13
INV. 8" CLAY(SE)=218.05
INV. 8" CLAY(NW)=217.99

SMH 5346
RIM=223.52
INV. 8" CLAY(N)=219.05
INV. 6" ASB(NE)=219.56
INV. 8" CLAY(S)=219.02

SMH 6588
RIM=222.35
INV. 10" PVC(NE)=213.55
INV. 10" PVC(SW)=213.39

SMH 7248(DMH W/ SMH COVER)
RIM=221.12
INV. 6" PVC(N)=217.70
INV. 12" PVC(NE)=216.37
INV. 12" RCP(E)=217.72
INV. 12" PVC(W)=216.43
SUMP=213.77

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

EXISTING CONDITIONS PLAN (5 OF 5)

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EX-05

REV

REMOVE EXISTING CABLE FROM CONDUIT TO REMAIN (ITEM L-110-5.5)

REMOVE EXISTING CABLE AND CONDUIT (TYP) (ITEM L-110-5.4)

REMOVE EXISTING ELEVATED TAXIWAY EDGE LIGHT AND BASE CAN (TYP) SEE NOTE 17 (ITEMS L-125-5.5 & L-125-5.6)

FULL DEPTH UNCLASSIFIED EXCAVATION FOR PROPOSED TAXIWAY PAVEMENT BOX (TYP) SEE SHEET TS-01 FOR TYPICAL SECTIONS (ITEM P-152-4.1)

MILL EXISTING PAVEMENT SEE SHEET CL-01 (ITEM P-101-5.6)

REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT ON EXISTING BASE CAN(TYP) (ITEM L-125-5.4)

SAWCUT EXISTING PAVEMENT (TYP) (INCIDENTAL TO ITEM P-101-5.1)

PROTECT EXISTING UNDERDRAIN (TYP)

REMOVE EXISTING CHAIN LINK SECURITY FENCE (TYP) SEE SHEET CS-00 TO CS-08 FOR PHASING OF THIS WORK (ITEM F-162-5.3)

BITUMINOUS PAVEMENT REMOVAL (TYP) SEE NOTE 16 (ITEM P-101-5.1)

REMOVE EXISTING ELECTRIC MAHOLE (TYP) REPLACE WITH AIRCRAFT RATED ELECTRIC MANHOLE SEE DETAIL ON SHEET EP-05 (ITEM L-115-5.2)

MILL EXISTING PAVEMENT AS NEEDED TO TRANSITION GRADE FROM PROPOSED APRON TO TIE IN SEE DETAIL ON SHEET TS-01 (ITEM P-101-5.6)

REMOVE EXISTING OVERHEAD WIRE (TYP) (ITEM M-400-5.9A & M-400-5.9B)

REMOVE EXISTING LIGHT POLE (TYP) (ITEM M-400-5.9A & M-400-5.9B)

REMOVE EXISTING DRAIN STRUCTURE (TYP) (ITEM P-101-5.7B)

REMOVE EXISTING DRAIN PIPE (TYP) (ITEM P-101-5.7A)

EXISTING UTILITY POLE AND ASSOCIATED OVERHEAD WIRE TO BE REMOVED BY OTHERS (TYP)

FULL DEPTH PAVEMENT REMOVAL AND UNCLASSIFIED EXCAVATION FOR PROPOSED SNOWMELTER PAD (ITEMS P-101-5.1 & P-152-4.1)

FULL DEPTH PAVEMENT REMOVAL AND UNCLASSIFIED EXCAVATION (TYP) SEE SHEETS TS-01 AND TS-02 FOR TYPICAL SECTIONS (ITEMS P-101-5.1 & P-152-4.1)

MATCH LINE (SEE SHEET DE-02)

MATCH LINE (SEE SHEET DE-03A)

0 40 80 120 FT
SCALE

NOTES:

1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET CS-00 TO CS-08 FOR CONSTRUCTION SAFETY AND PHASING PLANS.
3. CONTRACTOR TO PROTECT ALL EXISTING OBJECTS NOT SCHEDULED TO BE REMOVED.
4. CONTRACTOR TO DE-ENERGIZE TAXIWAY LIGHT CIRCUITS AND IMPLEMENT LOCK OUT/TAG OUT PROCEDURE PRIOR TO ELECTRICAL DEMOLITION (INCIDENTAL TO ITEM M-200-1).
5. CONTRACTOR TO INSTALL ANY NECESSARY JUMPERS REQUIRED TO KEEP OPEN TAXIWAY LIGHT CIRCUIT OPERATIONAL DURING CONSTRUCTION (INCIDENTAL TO ITEM M-200-1).
6. CONTRACTOR SHALL SAW-CUT ALL PAVEMENT EDGES PRIOR TO REMOVAL OF PAVEMENT (INCIDENTAL TO ITEM P-101-5.1).
7. ALL LIGHTS NOT TO BE REUSED SHALL BE REMOVED AND SALVAGED. THE AIRPORT SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL REMOVED LIGHTS.
8. REMOVE AND SALVAGE ALL AIRFIELD GUIDANCE SIGNS SCHEDULED FOR RELOCATION AND STORE IN A LOCATION AS DIRECTED BY MHT OPERATIONS (ITEM L-125-5.3).
9. PATCH ABANDONED INVERTS WITH BRICK AND MORTAR WHERE DRAIN PIPES ARE REMOVED FROM CATCH BASINS TO REMAIN (INCIDENTAL TO ITEM P-101-5.7A).
10. THE AIRPORT SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL REMOVED CATCH BASIN FRAME AND GRATES NOT TO BE REUSED.
11. BEFORE DEMOLITION, CONTRACTOR TO VERIFY EXISTING CIRCUITRY WITH GUIDANCE FROM MHT. CONTRACTOR SHALL PROPOSE NEW WIRE AND CONDUIT LAYOUT TO ENGINEER IF NEEDED PRIOR TO STARTING DEMOLITION.
12. SEE SHEET EP-01 TO EP-04B FOR LOCATION OF NEW ELECTRIC MANHOLES.
13. SEE SHEET GR-01 TO GR-04B FOR STRUCTURE ADJUSTMENTS.
14. FOR CONDUIT/DUCT BANK REMOVALS UNDER ITEM L-110-5.4, AND CABLE REMOVAL IN CONDUIT/DUCT BANKS TO REMAIN UNDER ITEM L-110-5.5, THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT WHETHER THERE IS ONLY ONE CONDUIT AND OR MULTIPLE CONDUITS FOR THE LINEAR SECTION OF DUCT BANK OR CONDUIT BEING REMOVED, OR WHETHER THERE IS ONLY ONE OR MULTIPLE CABLES REMOVED FROM A CONDUIT TO REMAIN, AND SHALL BE CONSIDERED INCIDENTAL TO THE CONDUIT/DUCT BANK OR CABLE REMOVAL ITEM.
15. PLACE TOPSOIL, SEED, AND MULCH TO ALL PAVEMENT REMOVAL AREAS NOT SCHEDULED TO BE RE-PAVED.
16. FOR PAVEMENT REMOVAL AREAS WITH GREATER THAN 2" OF PAVEMENT, REFILL WITH P-154 FILL, MIN. 2" TOPSOIL, SEED AND MULCH. REGRADE AS REQUIRED TO ALLOW FOR POSITIVE DRAINAGE. SEE SHEET TS-01 FOR DETAIL. (ITEMS P-154-5.1, T-901-5.1, T-905-5.1, T-908-5.1)
17. ALL TEN (10) EXISTING 14" ELEVATED TAXIWAY EDGE LIGHTS SCHEDULED FOR REMOVAL SHALL BE REMOVED AND SALVAGED. SIX (6) OF THE TEN (10) REMOVED 14" ELEVATED TAXIWAY EDGE LIGHTS SHALL BE REINSTALLED ON NEW BASE CANS. ELEVATED TAXIWAY EDGE LIGHTS REMOVED, STORED AND REINSTALLED ON NEW BASE CANS SHALL BE PAID FOR UNDER ITEM L-125-5.5. ELEVATED TAXIWAY EDGE LIGHTS REMOVED SHALL BE PAID FOR UNDER ITEM L-125-5.6. SEE SHEETS EP-01 AND EP-02.

LEGEND

- BITUMINOUS PAVEMENT REMOVAL
- FULL DEPTH UNCLASSIFIED EXCAVATION
- BITUMINOUS PAVEMENT REMOVAL AND UNCLASSIFIED EXCAVATION
- MILL EXISTING PAVEMENT
- SAWCUT EXISTING PAVEMENT
- REMOVE EXISTING ELECTRICAL CONDUIT AND CABLE
- REMOVE EXISTING PIPE
- REMOVE EXISTING OVERHEAD WIRE
- REMOVE EXISTING FENCE
- REMOVE EXISTING CURB
- REMOVE AND SALVAGE EXISTING ELEVATED TAXIWAY EDGE LIGHT AND BASE CAN
- REMOVE, STORE AND RELOCATE EXISTING AIRFIELD GUIDANCE SIGN ON NEW FOUNDATION
- REMOVE EXISTING DRAINAGE STRUCTURE
- REMOVE EXISTING ELECTRIC STRUCTURE
- REMOVE EXISTING LIGHT POLE
- EXISTING UTILITY POLE TO BE REMOVED BY OTHERS
- REMOVE, STORE AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DEMOLITION PLAN - BASE BID

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
DE-01

SHEET 21 OF 90
REV

MILL EXISTING PAVEMENT
SEE SHEET CL-01
(ITEM P-101-5.6)

SAWCUT EXISTING PAVEMENT (TYP)
(INCIDENTAL TO ITEM P-101-5.1)

REMOVE AND SALVAGE EXISTING ELEVATED TAXIWAY EDGE LIGHT AND BASE CAN (TYP)
SEE NOTE 17 ON SHEET EP-01 (ITEMS L-125-5.5 & L-125-5.6)

REMOVE EXISTING CABLE AND CONDUIT (TYP)
(ITEM L-110-5.4)

PROTECT EXISTING UNDERDRAIN (TYP)

REMOVE EXISTING CABLE
FROM CONDUIT TO REMAIN
(ITEM L-110-5.5)

REMOVE EXISTING
DRAINAGE STRUCTURE (TYP)
(ITEM P-101-5.7B)

REMOVE EXISTING
DRAIN PIPE (TYP)
(ITEM P-101-5.7A)

FULL DEPTH UNCLASSIFIED EXCAVATION
FOR PROPOSED PAVEMENT BOX (TYP)
SEE SHEET TS-01 FOR TYPICAL SECTIONS
(ITEM P-152-4.1)

REMOVE EXISTING
LIGHT POLE (TYP)
(ITEM M-400-5.9B)

REMOVE EXISTING
OVERHEAD WIRE (TYP)
(ITEM M-400-5.9B)

FULL DEPTH PAVEMENT
REMOVAL AND UNCLASSIFIED
EXCAVATION (TYP)
SEE SHEETS TS-01 AND TS-02
FOR TYPICAL SECTIONS
(ITEMS P-101-5.1 & P-152-4.1)

SEE INSET A THIS SHEET

EXISTING ASOS TO BE DISCONNECTED AND
RELOCATED BY OTHERS
SEE SHEET AS-01 FOR PROPOSED ASOS LOCATION
SEE INSET A THIS SHEET FOR DEMOLITION
REQUIREMENTS
(ITEM M-500-1)

RECONSTRUCT PAVEMENT FOR
TEMPORARY VEHICLE SERVICE ROAD
SEE SHEET CS-04 (ITEM M-200-3)

REMOVE EXISTING CHAIN LINK
SECURITY FENCE (TYP)
SEE SHEET CS-00 TO CS-08 FOR
PHASING OF THIS WORK
(ITEM F-162-5.3)

REMOVE EXISTING VEHICLE SERVICE
ROAD MARKINGS (TYP)
(ITEM P-620-5.1A)

MATCH LINE (SEE SHEET DE-01)

MATCH LINE (SEE SHEET DE-03A)

REMOVE EXISTING
CRUSHED STONE PAD
(ITEM M-500-1)

REMOVE EXISTING
CONCRETE PAD
(ITEM M-500-1)

REMOVE ALL REMAINING ASOS EQUIPMENT
AND ASSOCIATED UTILITIES REMAINING
AFTER ASOS REMOVAL BY OTHERS
(ITEM M-500-1)

NOTE:
1. SEE SHEET EX-02 FOR ASOS EXISTING CONDITIONS.

REMOVE EXISTING BOLLARDS
(ITEM M-500-1)

REMOVE AND PROPERLY DISPOSE
OF EXISTING UNDERGROUND
LIQUID PROPANE TANK
(ITEM M-500-1)

INSET A - EXISTING ASOS
SCALE: 1" = 20'

CB
RIM=219.36
6" INV. IN=217.28
48" INV. IN=211.38
48" INV. OUT=211.18

LEGEND

- BITUMINOUS PAVEMENT REMOVAL
- FULL DEPTH UNCLASSIFIED EXCAVATION
- BITUMINOUS PAVEMENT REMOVAL AND UNCLASSIFIED EXCAVATION
- SAW CUT EXISTING PAVEMENT
- REMOVE EXISTING ELECTRICAL CONDUIT AND CABLE
- REMOVE EXISTING CABLE FROM CONDUIT TO REMAIN
- REMOVE EXISTING PIPE
- REMOVE EXISTING OVERHEAD WIRE
- REMOVE EXISTING FENCE
- REMOVE EXISTING PAVEMENT MARKING
- REMOVE AND SALVAGE EXISTING ELEVATED TAXIWAY EDGE LIGHT AND BASE CAN
- REMOVE, STORE AND RELOCATE EXISTING AIRFIELD GUIDANCE SIGN ON NEW FOUNDATION
- REMOVE EXISTING DRAINAGE STRUCTURE
- REMOVE EXISTING ELECTRICAL STRUCTURE
- REMOVE EXISTING LIGHT POLE
- REMOVE EXISTING UTILITY POLE

0 40 80 120 FT
SCALE

NOTES:
1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET DE-01 FOR DEMOLITION NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DEMOLITION PLAN – BASE BID

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
DE-02

SHEET 22 OF 90
REV

MILL EXISTING PAVEMENT
SEE SHEET CL-01
(ITEM P-101-5.6)

SAWCUT EXISTING PAVEMENT (TYP)
(INCIDENTAL TO ITEM P-101-5.1)

REMOVE AND SALVAGE EXISTING ELEVATED TAXIWAY EDGE LIGHT AND BASE CAN (TYP)
SEE NOTE 17 ON SHEET EP-01 (ITEMS L-125-5.5 & L-125-5.6)

REMOVE EXISTING CABLE AND CONDUIT (TYP)
(ITEM L-110-5.4)

PROTECT EXISTING UNDERDRAIN (TYP)

REMOVE EXISTING CABLE
FROM CONDUIT TO REMAIN
(ITEM L-110-5.5)

REMOVE EXISTING ELEVATED
TAXIWAY EDGE LIGHT AND
BASE CAN (TYP)
(ITEM L-125-5.6)

REMOVE EXISTING
DRAIN PIPE (TYP)
(ITEM P-101-5.7A)

REMOVE, STORE AND RELOCATE
EXISTING GUIDANCE SIGN AND
FOUNDATION (TYP)
(ITEM L-125-5.3)

REMOVE EXISTING
DRAINAGE STRUCTURE (TYP)
(ITEM P-101-5.7B)

FULL DEPTH UNCLASSIFIED
EXCAVATION FOR PROPOSED
PAVEMENT BOX (TYP)
SEE SHEET TS-01 FOR TYPICAL
SECTIONS
(ITEM P-152-4.1)

REMOVE EXISTING
LIGHT POLE (TYP)
(ITEM M-400-5.9B)

REMOVE EXISTING
OVERHEAD WIRE (TYP)
(ITEM M-400-5.9B)

REMOVE EXISTING CATCH BASIN
AND REPLACE WITH NEW AIRCRAFT
RATED MANHOLE
(ITEMS P-101-5.7B & D-751-5.1A)

SEE INSET A THIS SHEET

FULL DEPTH PAVEMENT REMOVAL
AND UNCLASSIFIED EXCAVATION (TYP)
SEE SHEETS TS-01 AND TS-02 FOR
TYPICAL SECTIONS
(ITEMS P-101-5.1 & P-152-4.1)

REMOVE, STORE, AND REINSTALL EXISTING
ELEVATED TAXIWAY EDGE LIGHT ON
EXISTING BASE CAN
(ITEM L-125-5.4)

EXISTING ASOS TO BE DISCONNECTED AND
RELOCATED BY OTHERS
SEE SHEET AS-01 FOR PROPOSED ASOS LOCATION
SEE INSET A THIS SHEET FOR DEMOLITION
REQUIREMENTS
(ITEM M-500-1)

RECONSTRUCT PAVEMENT FOR
TEMPORARY VEHICLE SERVICE ROAD
SEE SHEET CS-04 (ITEM M-200-3)

REMOVE EXISTING CHAIN LINK
SECURITY FENCE (TYP)
SEE SHEET CS-00 TO CS-08 FOR
PHASING OF THIS WORK
(ITEM F-162-5.3)

REMOVE EXISTING VEHICLE SERVICE
ROAD MARKINGS (TYP)
(ITEM P-620-5.1A)

MATCH LINE (SEE SHEET DE-01)

MATCH LINE (SEE SHEET DE-03A)

INSET A - EXISTING ASOS
SCALE: 1" = 20'

REMOVE EXISTING
CRUSHED STONE PAD
(ITEM M-500-1)

REMOVE EXISTING
CONCRETE PAD
(ITEM M-500-1)

REMOVE ALL REMAINING ASOS EQUIPMENT
AND ASSOCIATED UTILITIES REMAINING
AFTER ASOS REMOVAL BY OTHERS
(ITEM M-500-1)

NOTE:
1. SEE SHEET EX-02 FOR ASOS EXISTING CONDITIONS.

REMOVE EXISTING BOLLARDS
(ITEM M-500-1)

REMOVE AND PROPERLY DISPOSE
OF EXISTING UNDERGROUND
LIQUID PROPANE TANK
(ITEM M-500-1)

LEGEND

- BITUMINOUS PAVEMENT REMOVAL
- FULL DEPTH UNCLASSIFIED EXCAVATION
- BITUMINOUS PAVEMENT REMOVAL AND UNCLASSIFIED EXCAVATION
- SAW CUT EXISTING PAVEMENT
- REMOVE EXISTING ELECTRICAL CONDUIT AND CABLE
- REMOVE EXISTING CABLE FROM CONDUIT TO REMAIN
- REMOVE EXISTING PIPE
- REMOVE EXISTING OVERHEAD WIRE
- REMOVE EXISTING FENCE
- REMOVE AND SALVAGE EXISTING ELEVATED TAXIWAY EDGE LIGHT AND BASE CAN
- REMOVE, STORE AND RELOCATE EXISTING AIRFIELD GUIDANCE SIGN ON NEW FOUNDATION
- REMOVE EXISTING DRAINAGE STRUCTURE
- REMOVE EXISTING ELECTRICAL STRUCTURE
- REMOVE EXISTING LIGHT POLE
- REMOVE EXISTING UTILITY POLE
- REMOVE, STORE, AND REINSTALL EXISTING EDGE LIGHT

NOTES:
1. THIS SHEET SHALL REPLACE SHEET DE-02 IF ADD ALTERNATE 4 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE TAXIWAY D TAXILANE CONNECTOR SHALL BE PAID FOR AS PART OF ADD ALTERNATE 4. ALL OTHER WORK SHOWN SHALL BE PAID FOR AS PART OF THE BASE BID.
3. SEE SHEET DE-01 FOR DEMOLITION NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DEMOLITION PLAN – ADD ALT 4

SCALE: 1" = 40' | DATE: MARCH 2022

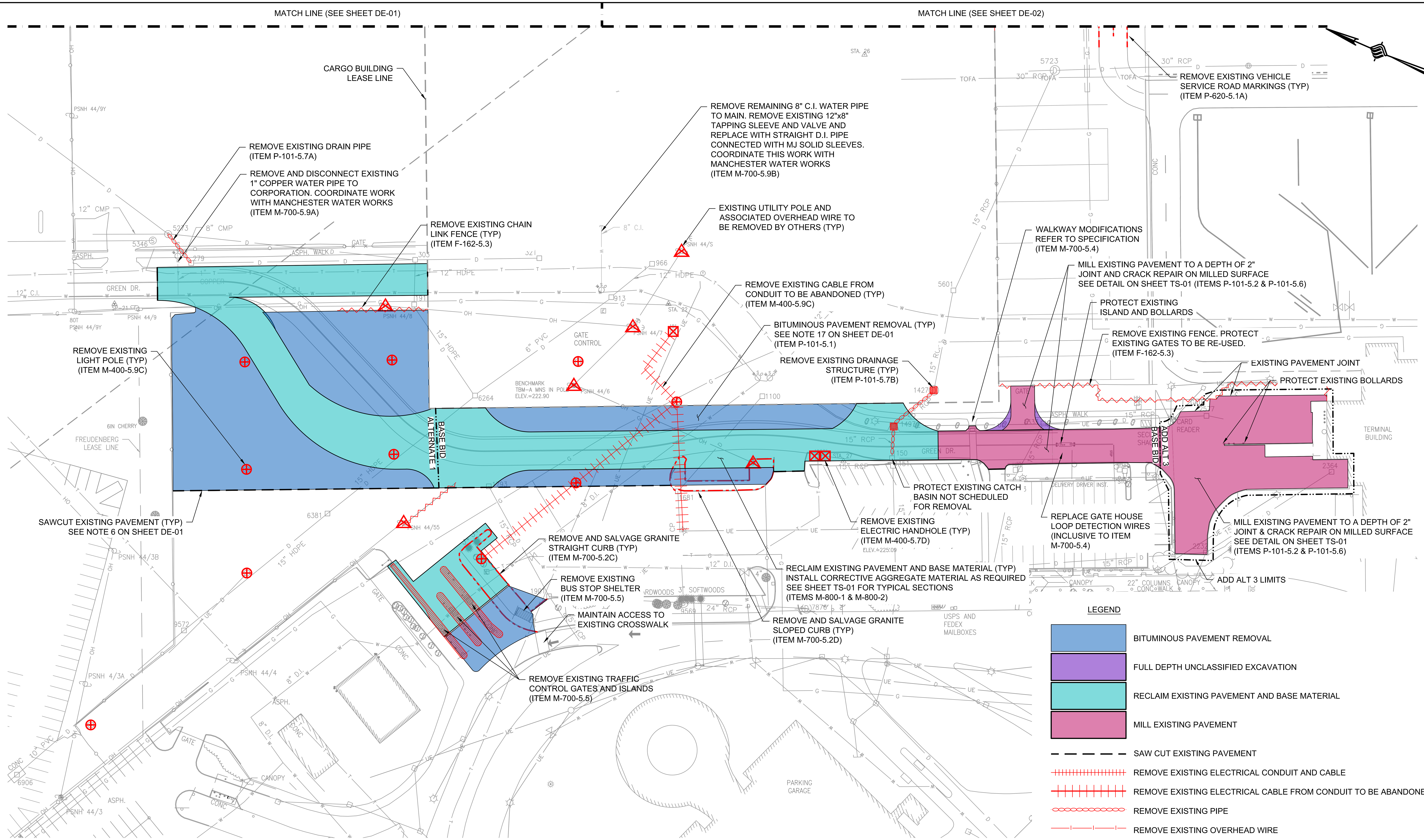
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
DE-02A

SHEET 23 OF 90 REV


MATCH LINE (SEE SHEET DE-01)
MATCH LINE (SEE SHEET DE-02)
CARGO BUILDING LEASE LINE
REMOVE EXISTING DRAIN PIPE (ITEM P-101-5.7A)
REMOVE AND DISCONNECT EXISTING 1" COPPER WATER PIPE TO CORPORATION. COORDINATE WORK WITH MANCHESTER WATER WORKS (ITEM M-700-5.9A)
REMOVE EXISTING CHAIN LINK FENCE (TYP) (ITEM F-162-5.3)
REMOVE REMAINING 8" C.I. WATER PIPE TO MAIN. REMOVE EXISTING 12"x8" TAPPING SLEEVE AND VALVE AND REPLACE WITH STRAIGHT D.I. PIPE CONNECTED WITH MJ SOLID SLEEVES. COORDINATE THIS WORK WITH MANCHESTER WATER WORKS (ITEM M-700-5.9B)
EXISTING UTILITY POLE AND ASSOCIATED OVERHEAD WIRE TO BE REMOVED BY OTHERS (TYP)
REMOVE EXISTING CABLE FROM CONDUIT TO BE ABANDONED (TYP) (ITEM M-400-5.9C)
BITUMINOUS PAVEMENT REMOVAL (TYP) SEE NOTE 17 ON SHEET DE-01 (ITEM P-101-5.1)
REMOVE EXISTING DRAINAGE STRUCTURE (TYP) (ITEM P-101-5.7B)
REMOVE EXISTING VEHICLE SERVICE ROAD MARKINGS (TYP) (ITEM P-620-5.1A)
WALKWAY MODIFICATIONS REFER TO SPECIFICATION (ITEM M-700-5.4)
MILL EXISTING PAVEMENT TO A DEPTH OF 2" JOINT AND CRACK REPAIR ON MILLED SURFACE SEE DETAIL ON SHEET TS-01 (ITEMS P-101-5.2 & P-101-5.6)
PROTECT EXISTING ISLAND AND BOLLARDS
REMOVE EXISTING FENCE. PROTECT EXISTING GATES TO BE RE-USED. (ITEM F-162-5.3)
EXISTING PAVEMENT JOINT
PROTECT EXISTING BOLLARDS
TERMINAL BUILDING
REMOVE EXISTING LIGHT POLE (TYP) (ITEM M-400-5.9C)
BASE BID
ALTERNATE 1
ADD ALT 3
BASE BID
GREEN DR.
SAWCUT EXISTING PAVEMENT (TYP) SEE NOTE 6 ON SHEET DE-01
PROTECT EXISTING CATCH BASIN NOT SCHEDULED FOR REMOVAL
REMOVE EXISTING ELECTRIC HANDHOLE (TYP) (ITEM M-400-5.7D)
REPLACE GATE HOUSE LOOP DETECTION WIRES (INCLUSIVE TO ITEM M-700-5.4)
MILL EXISTING PAVEMENT TO A DEPTH OF 2" JOINT & CRACK REPAIR ON MILLED SURFACE SEE DETAIL ON SHEET TS-01 (ITEMS P-101-5.2 & P-101-5.6)
ADD ALT 3 LIMITS
REMOVE AND SALVAGE GRANITE STRAIGHT CURB (TYP) (ITEM M-700-5.2C)
REMOVE EXISTING BUS STOP SHELTER (ITEM M-700-5.5)
MAINTAIN ACCESS TO EXISTING CROSSWALK
RECLAIM EXISTING PAVEMENT AND BASE MATERIAL (TYP) INSTALL CORRECTIVE AGGREGATE MATERIAL AS REQUIRED SEE SHEET TS-01 FOR TYPICAL SECTIONS (ITEMS M-800-1 & M-800-2)
REMOVE AND SALVAGE GRANITE SLOPED CURB (TYP) (ITEM M-700-5.2D)
REMOVE EXISTING TRAFFIC CONTROL GATES AND ISLANDS (ITEM M-700-5.5)
FREUDENBERG LEASE LINE
USPS AND FEDEX MAILBOXES
PARKING GARAGE
LEGEND
BITUMINOUS PAVEMENT REMOVAL
FULL DEPTH UNCLASSIFIED EXCAVATION
RECLAIM EXISTING PAVEMENT AND BASE MATERIAL
MILL EXISTING PAVEMENT
SAW CUT EXISTING PAVEMENT
REMOVE EXISTING ELECTRICAL CONDUIT AND CABLE
REMOVE EXISTING ELECTRICAL CABLE FROM CONDUIT TO BE ABANDONED
REMOVE EXISTING PIPE
REMOVE EXISTING OVERHEAD WIRE
REMOVE EXISTING FENCE
REMOVE EXISTING CURB
REMOVE EXISTING DRAINAGE STRUCTURE
REMOVE EXISTING ELECTRICAL STRUCTURE
REMOVE EXISTING LIGHT POLE
REMOVE EXISTING UTILITY POLE
REMOVE AND SALVAGE EXISTING POLE MOUNTED SIGN

NOTES:

1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 1 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.
3. SEE SHEET DE-01 FOR DEMOLITION NOTES.

0 40 80 120 FT

SCALE

ENGINEER'S SEAL

PROJECT DESIGNER

McFarland Johnson

53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DEMOLITION PLAN – ALT 1 & ADD ALT 3

DATE: MARCH 2022

SCALE: 1" = 40'

REV. NO.	DATE	DESCRIPTION	BY

REVISIONS

MJ PROJ. No.: 18700.08

FILE NAME:

AIP No.: 3-33-0011-XXX-2021

DRAWING NO.

DE-03A

SHEET 24 OF 90

REV

MATCH LINE (SEE SHEET DE-01)

MATCH LINE (SEE SHEET DE-02)

MATCH LINE (SEE INSET A ON SHEET DE-04B)

MATCH LINE (SEE SHEET DE-04B)

CARGO BUILDING LEASE LINE

FREUDENBERG LEASE LINE

REMOVE EXISTING DRAIN PIPE (ITEM P-101-5.7A)

REMOVE AND DISCONNECT EXISTING 1" COPPER WATER PIPE TO CORPORATION. COORDINATE WORK WITH MANCHESTER WATER WORKS (ITEM M-700-5.9A)

REMOVE EXISTING CHAIN LINK FENCE (TYP) (ITEM F-162-5.3)

REMOVE EXISTING LIGHT POLE (TYP) (ITEM M-400-5.9C)

PROTECT EXISTING CATCH BASIN NOT SCHEDULED FOR REMOVAL

SAWCUT EXISTING PAVEMENT (TYP) SEE NOTE 6 ON SHEET DE-01

REMOVE AND SALVAGE EXISTING POLE MOUNTED SIGN (TYP) (ITEM M-700-5.3C)

REMOVE EXISTING LOT C CANOPY AND RELOCATE ACCESS CONTROL GATE (ITEM M-700-5.6)

FULL DEPTH UNCLASSIFIED EXCAVATION FOR PROPOSED PAVEMENT BOX (TYP) SEE SHEET TS-01 FOR TYPICAL SECTION (ITEM P-152-4.1)

BASE BID ALTERNATE 2

REMOVE REMAINING 8" C.I. WATER PIPE TO MAIN. REMOVE EXISTING 12"x8" TAPPING SLEEVE AND VALVE AND REPLACE WITH STRAIGHT D.I. PIPE CONNECTED WITH MJ SOLID SLEEVES. COORDINATE THIS WORK WITH MANCHESTER WATER WORKS (ITEM M-700-5.9B)

EXISTING UTILITY POLE AND ASSOCIATED OVERHEAD WIRE TO BE REMOVED BY OTHERS (TYP)

REMOVE EXISTING CABLE FROM CONDUIT TO BE ABANDONED (TYP) (ITEM M-400-5.9C)

BITUMINOUS PAVEMENT REMOVAL (TYP) SEE NOTE 17 ON SHEET DE-01 (ITEM P-101-5.1)

REMOVE EXISTING DRAINAGE STRUCTURE (TYP) (ITEM P-101-5.7B)

PROTECT EXISTING CATCH BASIN NOT SCHEDULED FOR REMOVAL

REMOVE EXISTING ELECTRIC HANDHOLE (TYP) (ITEM M-400-5.7D)

REMOVE AND SALVAGE GRANITE STRAIGHT CURB (TYP) (ITEM M-700-5.2C)

REMOVE EXISTING BUS STOP SHELTER (ITEM M-700-5.5)

MAINTAIN ACCESS TO EXISTING CROSSWALK

RECLAIM EXISTING PAVEMENT AND BASE MATERIAL (TYP) INSTALL CORRECTIVE AGGREGATE MATERIAL AS REQUIRED SEE SHEET TS-01 FOR TYPICAL SECTIONS (ITEMS M-800-1 & M-800-2)

REMOVE AND SALVAGE GRANITE SLOPED CURB (TYP) (ITEM M-700-5.2D)

REMOVE EXISTING TRAFFIC CONTROL GATES AND ISLANDS (ITEM M-700-5.5)

REMOVE EXISTING VEHICLE SERVICE ROAD MARKINGS (TYP) (ITEM P-620-5.1A)

WALKWAY MODIFICATIONS REFER TO SPECIFICATION (ITEM M-700-5.4)

MILL EXISTING PAVEMENT TO A DEPTH OF 2" JOINT AND CRACK REPAIR ON MILLED SURFACE SEE DETAIL ON SHEET TS-01 (ITEMS P-101-5.2 & P-101-5.6)

PROTECT EXISTING ISLAND AND BOLLARDS

REMOVE EXISTING FENCE. PROTECT EXISTING GATES TO BE RE-USED. (ITEM F-162-5.3)

EXISTING PAVEMENT JOINT

PROTECT EXISTING BOLLARDS

REPLACE GATE HOUSE LOOP DETECTION WIRES (INCLUSIVE TO ITEM M-700-5.4)

MILL EXISTING PAVEMENT TO A DEPTH OF 2" JOINT & CRACK REPAIR ON MILLED SURFACE SEE DETAIL ON SHEET TS-01 (ITEMS P-101-5.2 & P-101-5.6)

ADD ALT 3 LIMITS

ADD ALT 3 BASE BID

TERMINAL BUILDING

PARKING GARAGE

USPS AND FEDEX MAILBOXES

BENCHMARK TBM-A MNS IN POLE ELEV.=222.90

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.
3. SEE SHEET DE-01 FOR DEMOLITION NOTES.

LEGEND

- BITUMINOUS PAVEMENT REMOVAL
- FULL DEPTH UNCLASSIFIED EXCAVATION
- RECLAIM EXISTING PAVEMENT AND BASE MATERIAL
- MILL EXISTING PAVEMENT
- SAW CUT EXISTING PAVEMENT
- REMOVE EXISTING ELECTRICAL CONDUIT AND CABLE
- REMOVE EXISTING ELECTRICAL CABLE FROM CONDUIT TO BE ABANDONED
- REMOVE EXISTING PIPE
- REMOVE EXISTING OVERHEAD WIRE
- REMOVE EXISTING FENCE
- REMOVE EXISTING CURB
- REMOVE EXISTING DRAINAGE STRUCTURE
- REMOVE EXISTING ELECTRICAL STRUCTURE
- REMOVE EXISTING LIGHT POLE
- REMOVE EXISTING UTILITY POLE
- REMOVE AND SALVAGE EXISTING POLE MOUNTED SIGN

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN R. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DEMOLITION PLAN
ALT 2 & ADD ALT 3

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
DE-03B

SHEET 25 OF 90
REV

MATCH LINE (SEE SHEET DE-03B)

BITUMINOUS PAVEMENT REMOVAL (TYP)
SEE NOTE 17 ON SHEET DE-01
(ITEM P-101-5.1)

RECLAIM EXISTING PAVEMENT AND BASE MATERIAL (TYP)
INSTALL CORRECTIVE AGGREGATE MATERIAL AS REQUIRED
SEE SHEET TS-01 FOR TYPICAL SECTIONS
(ITEMS M-800-1 & M-800-2)

SAWCUT EXISTING PAVEMENT (TYP)
SEE NOTE 6 ON SHEET DE-01

REMOVE AND SALVAGE EXISTING POLE MOUNTED SIGN (TYP)
(ITEM M-700-5.3C)

FULL DEPTH UNCLASSIFIED EXCAVATION FOR PROPOSED PAVEMENT BOX (TYP)
SEE SHEET TS-01 FOR TYPICAL SECTION
(ITEM P-152-4.1)

REMOVE AND SALVAGE EXISTING WIRELESS INTERNET POLE AND ASSOCIATED HARDWARE TO BE RELOCATED
SEE SHEET EP-04B FOR NEW LOCATION
(ITEM M-400-5.10)

REMOVE EXISTING DRAIN PIPE
(ITEM P-101-5.7A)

REMOVE EXISTING DRAINAGE STRUCTURE (TYP)
(ITEM P-101-5.7B)

REMOVE AND SALVAGE EXISTING TRAFFIC CONTROL GATE AND ASSOCIATED HARDWARE
SEE SHEET GE-04B FOR NEW LOCATION
(ITEM M-700-5.7)

REMOVE AND SALVAGE EXISTING HYDRANT TO BE RELOCATED
SEE SHEET GE-04B FOR NEW LOCATION
(ITEM M-700-5.9C)

REMOVE EXISTING CHAIN LINK FENCE (TYP)
(ITEM F-162-5.3)

LOT C

RECLAIM EXISTING PAVEMENT AND BASE MATERIAL
INSTALL CORRECTIVE AGGREGATE MATERIAL
SEE SHEET TS-01 FOR TYPICAL SECTIONS
(ITEMS M-800-1 & M-800-2)

CUL-DE-SAC AREA REMOVALS
REFER TO SPECIFICATION
(ITEM M-700-5.8)

INFILTRATION TRENCH

MATCH LINE (SEE SHEET DE-03B)

INSET A
SCALE: 1" = 40'

LEGEND

- BITUMINOUS PAVEMENT REMOVAL
- FULL DEPTH UNCLASSIFIED EXCAVATION
- RECLAIM EXISTING PAVEMENT AND BASE MATERIAL
- SAW CUT EXISTING PAVEMENT
- REMOVE EXISTING ELECTRICAL CONDUIT AND CABLE
- REMOVE EXISTING PIPE
- REMOVE EXISTING OVERHEAD WIRE
- REMOVE EXISTING FENCE
- REMOVE EXISTING CURB
- REMOVE EXISTING DRAINAGE STRUCTURE
- REMOVE EXISTING ELECTRICAL STRUCTURE
- REMOVE EXISTING LIGHT POLE
- REMOVE EXISTING UTILITY POLE
- REMOVE AND SALVAGE EXISTING POLE MOUNTED SIGN

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET DE-01 FOR DEMOLITION NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
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53 REGIONAL DRIVE, CONCORD, NH 03301-5022
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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DEMOLITION PLAN – ALT 2

SCALE: 1" = 40' | DATE: MARCH 2022

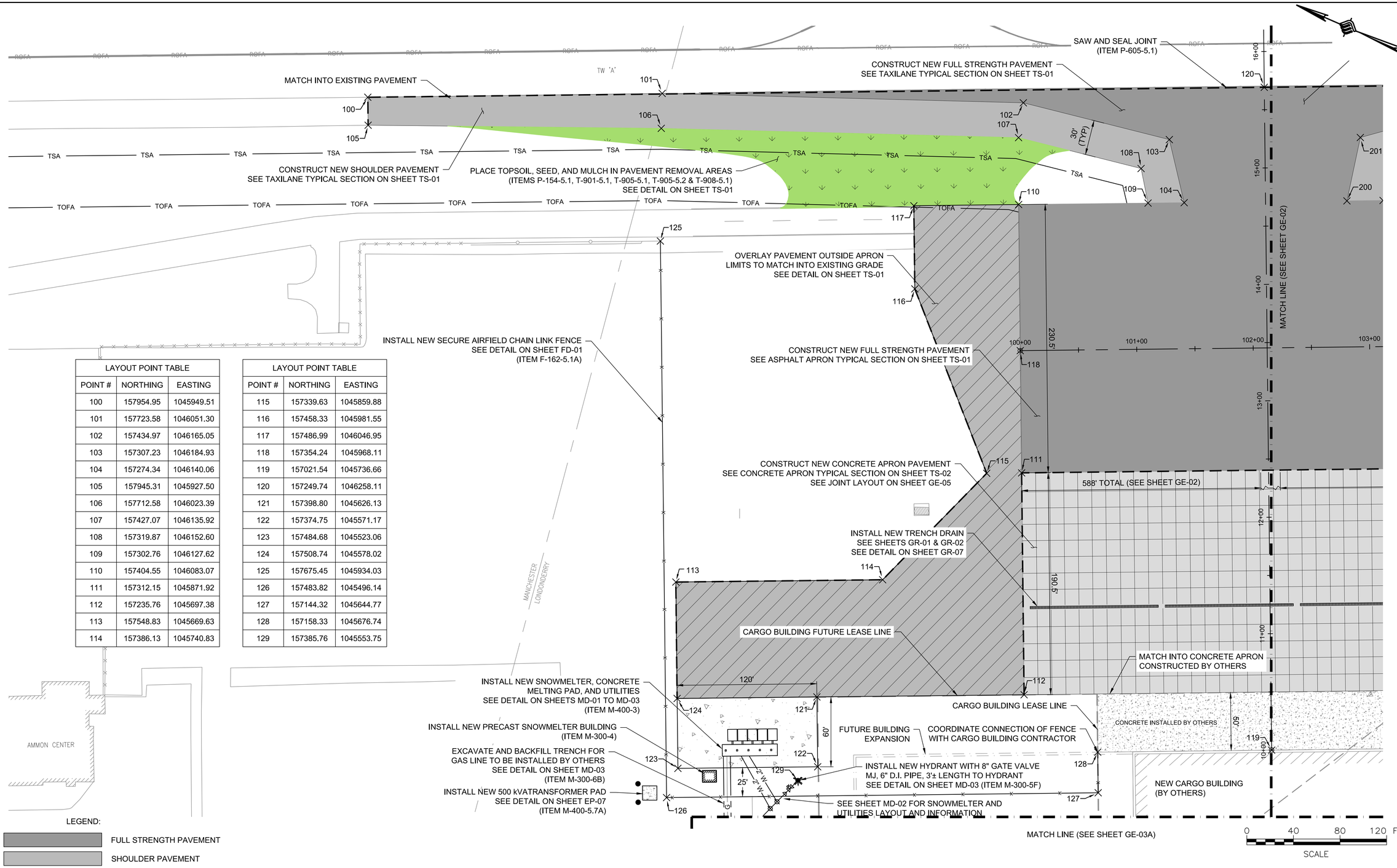
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
DE-04B

SHEET 26 OF 90 REV



LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
100	157954.95	1045949.51
101	157723.58	1046051.30
102	157434.97	1046165.05
103	157307.23	1046184.93
104	157274.34	1046140.06
105	157945.31	1045927.50
106	157712.58	1046023.39
107	157427.07	1046135.92
108	157319.87	1046152.60
109	157302.76	1046127.62
110	157404.55	1046083.07
111	157312.15	1045871.92
112	157235.76	1045697.38
113	157548.83	1045669.63
114	157386.13	1045740.83

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
115	157339.63	1045859.88
116	157458.33	1045981.55
117	157486.99	1046046.95
118	157354.24	1045968.11
119	157021.54	1045736.66
120	157249.74	1046258.11
121	157398.80	1045626.13
122	157374.75	1045571.17
123	157484.68	1045523.06
124	157508.74	1045578.02
125	157675.45	1045934.03
126	157483.82	1045496.14
127	157144.32	1045644.77
128	157158.33	1045676.74
129	157385.76	1045553.75

LEGEND:

- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON
- OVERLAY PAVEMENT
- GRASSED AREA
- SAW AND SEAL JOINT
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA

NOTES:
1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. FOR TYPICAL SECTIONS AND PAVEMENT DETAILS SEE SHEETS TS-01 & TS-02.
3. PAVEMENT SECTION ITEM NUMBERS ARE SHOWN ON TYPICAL SECTION DETAIL SHEETS.
4. FOR SNOWMELTER INSTALLATION AND OTHER MISCELLANEOUS DETAILS SEE SHEETS MD-01 TO MD-04.
5. FOR LAYOUT CONTROL POINTS NGS MONUMENT DATA SEE SHEET GP-01.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GEOMETRY LAYOUT PLAN – BASE BID

SCALE: 1" = 40'
DATE: MARCH 2022

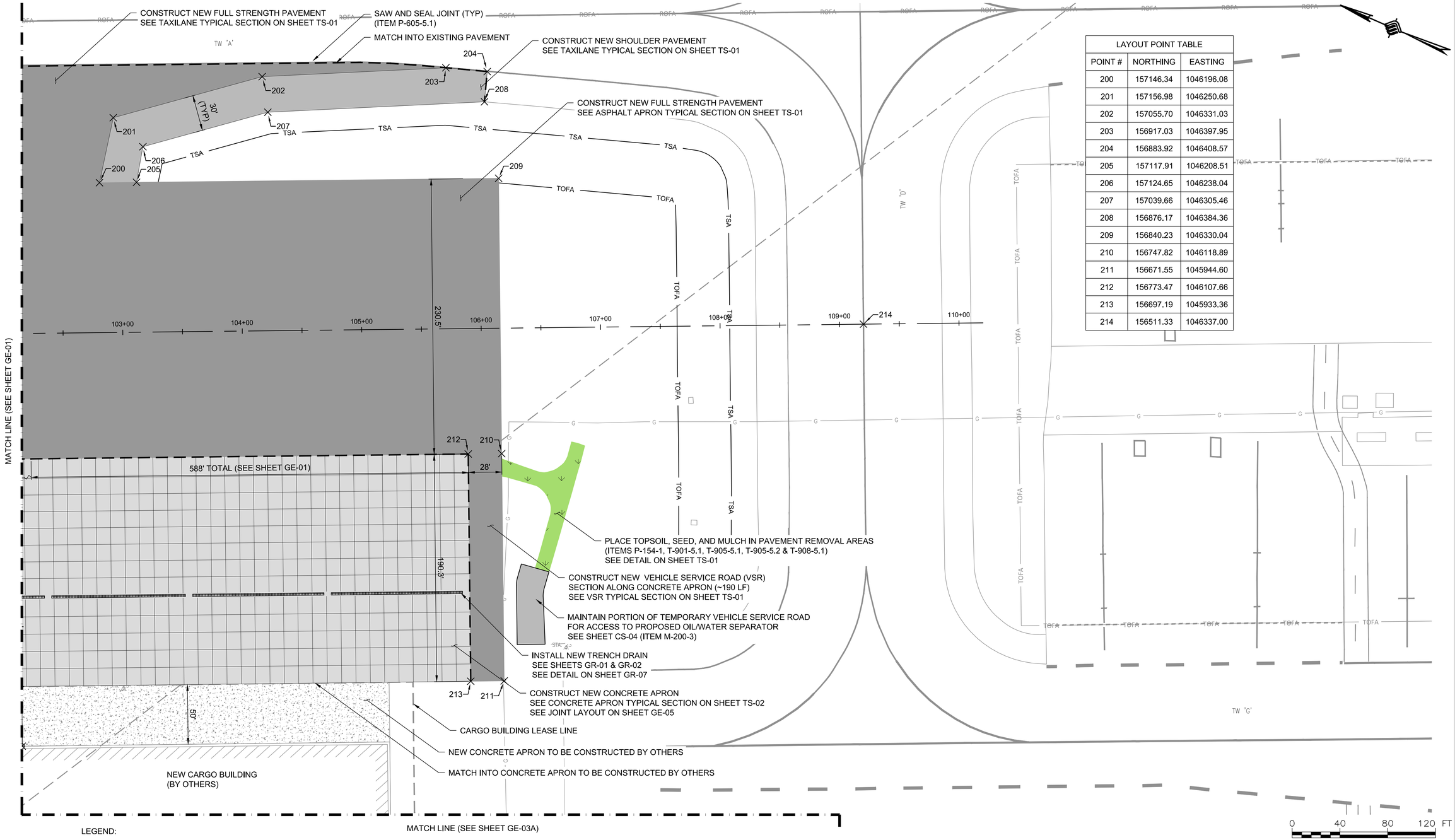
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GE-01

SHEET 27 OF 90
REV



LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
200	157146.34	1046196.08
201	157156.98	1046250.68
202	157055.70	1046331.03
203	156917.03	1046397.95
204	156883.92	1046408.57
205	157117.91	1046208.51
206	157124.65	1046238.04
207	157039.66	1046305.46
208	156876.17	1046384.36
209	156840.23	1046330.04
210	156747.82	1046118.89
211	156671.55	1045944.60
212	156773.47	1046107.66
213	156697.19	1045933.36
214	156511.33	1046337.00

LEGEND:

- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON
- GRASSED AREA
- SAW AND SEAL JOINT
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA

NOTES:
1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET GE-01 FOR GEOMETRY LAYOUT NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GEOMETRY LAYOUT PLAN – BASE BID

SCALE: 1" = 40' | DATE: MARCH 2022

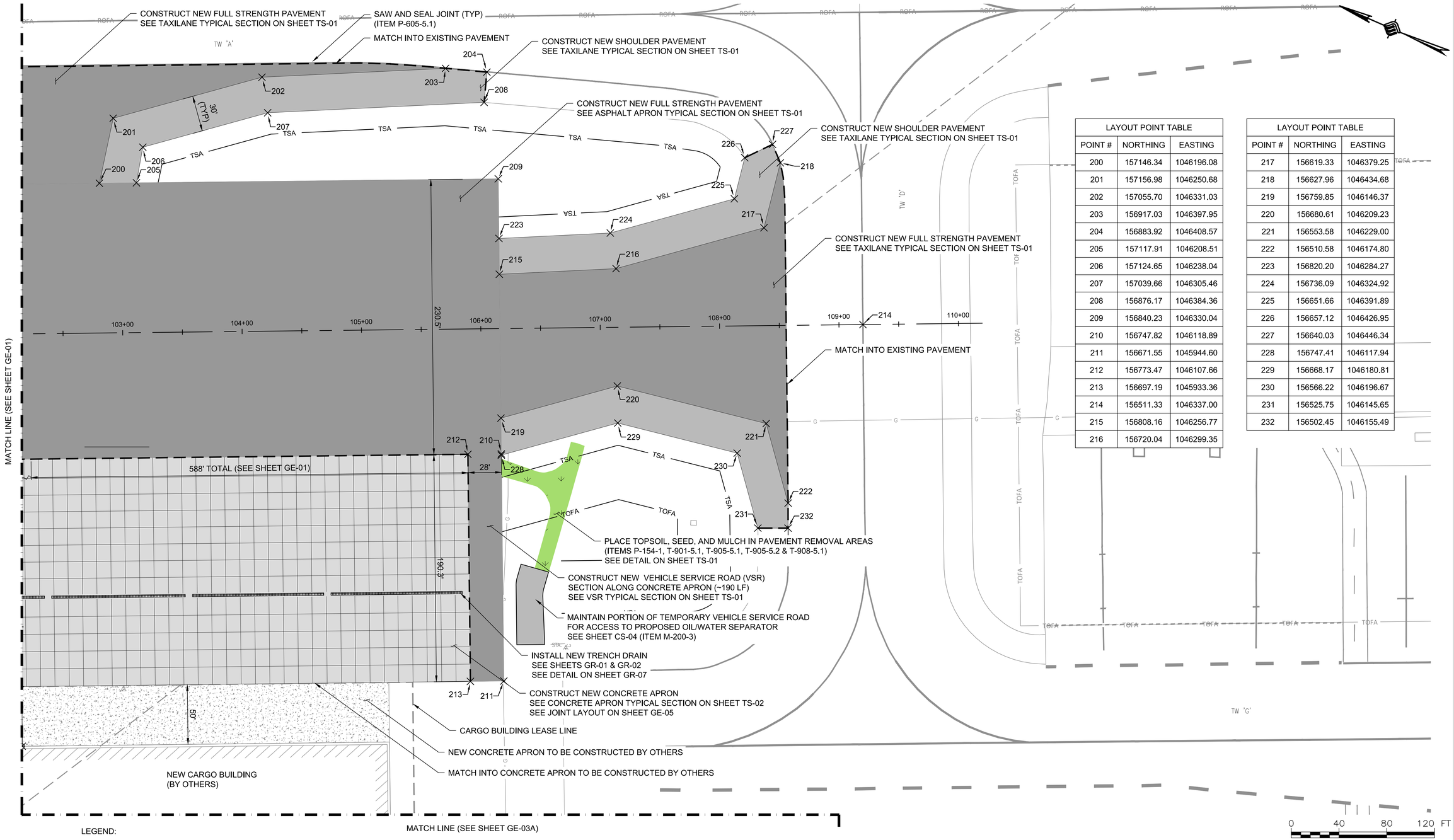
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GE-02

SHEET 28 OF 90 REV



LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
200	157146.34	1046196.08
201	157156.98	1046250.68
202	157055.70	1046331.03
203	156917.03	1046397.95
204	156883.92	1046408.57
205	157117.91	1046208.51
206	157124.65	1046238.04
207	157039.66	1046305.46
208	156876.17	1046384.36
209	156840.23	1046330.04
210	156747.82	1046118.89
211	156671.55	1045944.60
212	156773.47	1046107.66
213	156697.19	1045933.36
214	156511.33	1046337.00
215	156808.16	1046256.77
216	156720.04	1046299.35

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
217	156619.33	1046379.25
218	156627.96	1046434.68
219	156759.85	1046146.37
220	156680.61	1046209.23
221	156553.58	1046229.00
222	156510.58	1046174.80
223	156820.20	1046284.27
224	156736.09	1046324.92
225	156651.66	1046391.89
226	156657.12	1046426.95
227	156640.03	1046446.34
228	156747.41	1046117.94
229	156668.17	1046180.81
230	156566.22	1046196.67
231	156525.75	1046145.65
232	156502.45	1046155.49

LEGEND:

- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON
- GRASSED AREA
- SAW AND SEAL JOINT
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA

NOTES:
1. THIS SHEET SHALL REPLACE SHEET GE-02 IF ADD ALTERNATE 4 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE TAXIWAY D TAXILANE CONNECTOR SHALL BE PAID FOR AS PART OF ADD ALTERNATE 4. ALL OTHER WORK SHOWN SHALL BE PAID FOR AS PART OF THE BASE BID.
3. SEE SHEET GE-01 FOR GEOMETRY LAYOUT NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BOYNTON
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GEOMETRY LAYOUT PLAN - ADD ALT 4

SCALE: 1" = 40'
DATE: MARCH 2022

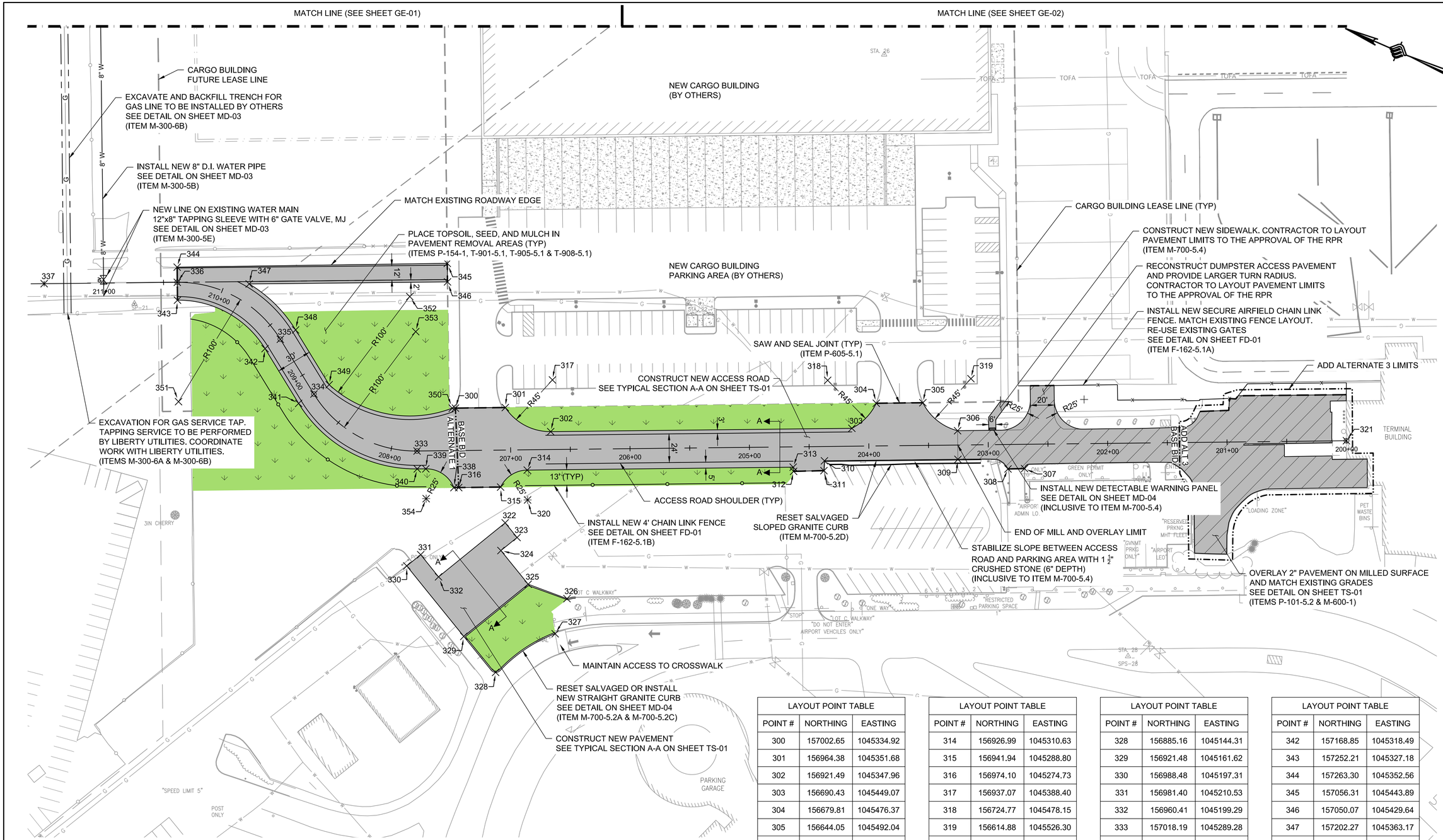
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GE-02A

SHEET 29 OF 90
REV



LEGEND:

- PAVEMENT
- OVERLAY PAVEMENT
- GRASSED AREA
- SAW AND SEAL JOINT
- GRANITE CURB

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 1 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.
3. SEE SHEET GE-01 FOR GEOMETRY LAYOUT NOTES.

0 40 80 120 FT
SCALE

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
300	157002.65	1045334.92
301	156964.38	1045351.68
302	156921.49	1045347.96
303	156690.43	1045449.07
304	156679.81	1045476.37
305	156644.05	1045492.04
306	156608.13	1045481.81
307	156544.10	1045474.52
308	156556.74	1045468.84
309	156598.50	1045459.82
310	156700.90	1045415.02
311	156698.10	1045407.27
312	156721.26	1045396.82
313	156722.93	1045399.92

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
314	156926.99	1045310.63
315	156941.94	1045288.80
316	156974.10	1045274.73
317	156937.07	1045388.40
318	156724.77	1045478.15
319	156614.88	1045526.30
320	156916.97	1045287.72
321	156305.09	1045601.32
322	156926.74	1045262.75
323	156912.77	1045255.33
324	156920.93	1045239.96
325	156888.89	1045222.94
326	156854.26	1045224.51
327	156851.90	1045193.56

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
328	156885.16	1045144.31
329	156921.48	1045161.62
330	156988.48	1045197.31
331	156981.40	1045210.53
332	156960.41	1045199.29
333	157018.19	1045289.28
334	157116.33	1045299.47
335	157160.14	1045330.71
336	157258.22	1045340.92
337	157360.41	1045296.30
338	156977.80	1045273.12
339	157005.57	1045278.42
340	157012.17	1045275.54
341	157125.03	1045287.25

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
342	157168.85	1045318.49
343	157252.21	1045327.18
344	157263.30	1045352.56
345	157056.31	1045443.89
346	157050.07	1045429.64
347	157202.27	1045363.17
348	157151.43	1045342.92
349	157107.62	1045311.68
350	157005.05	1045333.85
351	157218.20	1045249.28
352	157074.32	1045405.98
353	157058.27	1045380.89
354	156995.55	1045255.52

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT No. 7416
LICENSED PROFESSIONAL ENGINEER

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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GEOMETRY LAYOUT PLAN – ALT 1 & ADD ALT 3

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GE-03A

SHEET 30 OF 90
REV

MATCH LINE (SEE SHEET GE-01)

MATCH LINE (SEE SHEET GE-02)

MATCH LINE (SEE INSET A ON SHEET GE-04B)

CARGO BUILDING FUTURE LEASE LINE

EXCAVATE AND BACKFILL TRENCH FOR GAS LINE TO BE INSTALLED BY OTHERS SEE DETAIL ON SHEET MD-03 (ITEM M-300-6B)

INSTALL NEW 8" D.I. WATER PIPE SEE DETAIL ON SHEET MD-03 (ITEM M-300-5B)

NEW LINE ON EXISTING WATER MAIN 12"x8" TAPPING SLEEVE WITH 6" GATE VALVE, MJ SEE DETAIL ON SHEET MD-03 (ITEM M-300-5E)

PLACE TOPSOIL, SEED, AND MULCH IN PAVEMENT REMOVAL AREAS (TYP) (ITEMS T-901-5.1, T-905-5.1 & T-908-5.1)

NEW CARGO BUILDING (BY OTHERS)

NEW CARGO BUILDING PARKING AREA (BY OTHERS)

CARGO BUILDING LEASE LINE (TYP)

CONSTRUCT NEW SIDEWALK. CONTRACTOR TO LAYOUT PAVEMENT LIMITS TO THE APPROVAL OF THE RPR (ITEM M-700-5.4)

RECONSTRUCT DUMPSTER ACCESS PAVEMENT AND PROVIDE LARGER TURN RADIUS. CONTRACTOR TO LAYOUT PAVEMENT LIMITS TO THE APPROVAL OF THE RPR

INSTALL NEW SECURE AIRFIELD CHAIN LINK FENCE. MATCH EXISTING FENCE LAYOUT. RE-USE EXISTING GATES SEE DETAIL ON SHEET FD-01 (ITEM F-162-5.1A)

SAW AND SEAL JOINT (TYP) (ITEM P-605-5.1)

CONSTRUCT NEW ACCESS ROAD SEE TYPICAL SECTION A-A ON SHEET TS-01

ADD ALTERNATE 3 LIMITS

EXCAVATION FOR GAS SERVICE TAP. TAPPING SERVICE TO BE PERFORMED BY LIBERTY UTILITIES. COORDINATE WORK WITH LIBERTY UTILITIES. (ITEMS M-300-6A & M-300-6B)

BASE BID ALTERNATE 2

ADD ALT 3 BASE BID

INSTALL NEW DETECTABLE WARNING PANEL SEE DETAIL ON SHEET MD-04 (INCLUSIVE TO ITEM M-700-5.4)

END OF MILL AND OVERLAY LIMIT

ACCESS ROAD SHOULDER (TYP)

INSTALL NEW 4' CHAIN LINK FENCE SEE DETAIL ON SHEET FD-01 (ITEM F-162-5.1B)

RESET SALVAGED SLOPED GRANITE CURB (ITEM M-700-5.2D)

STABILIZE SLOPE BETWEEN ACCESS ROAD AND PARKING AREA WITH 1 ½" CRUSHED STONE (6" DEPTH) (INCLUSIVE TO ITEM M-700-5.4)

OVERLAY 2" PAVEMENT ON MILLED SURFACE AND MATCH EXISTING GRADES SEE DETAIL ON SHEET TS-01 (ITEMS P-101-5.2 & M-600-1)

MAINTAIN ACCESS TO CROSSWALK

RESET SALVAGED OR INSTALL NEW STRAIGHT GRANITE CURB SEE DETAIL ON SHEET MD-04 (ITEM M-700-5.2A & M-700-5.2C)

CONSTRUCT NEW PAVEMENT SEE TYPICAL SECTION A-A ON SHEET TS-01

CONSTRUCT NEW PAVEMENT OVER EXISTING GRASS ISLAND SEE TYPICAL SECTION B-B ON SHEET TS-01

TIE IN TO EXISTING FENCE

RELOCATE EXISTING LOT C TICKET DISPENSERS INCLUDING ELECTRIC AND COMMUNICATIONS SERVICE (ITEM M-700-5.6)

CENTER OF RADIUS (NOT SHOWN)

MATCH LINE (SEE SHEET GE-04B)

LEGEND:

- PAVEMENT
- OVERLAY PAVEMENT
- GRASSED AREA
- SAW AND SEAL JOINT
- GRANITE CURB

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.
3. SEE SHEET GE-01 FOR GEOMETRY LAYOUT NOTES.

0 40 80 120 FT
SCALE

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
300	157002.65	1045334.92
301	156964.38	1045351.68
302	156921.49	1045347.96
303	156690.43	1045449.07
304	156679.81	1045476.37
305	156644.05	1045492.04
306	156608.13	1045481.81
307	156544.10	1045474.52
308	156556.74	1045468.84
309	156598.50	1045459.82
310	156700.90	1045415.02
311	156698.10	1045407.27
312	156721.26	1045396.82
313	156722.93	1045399.92

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
314	156926.99	1045310.63
315	156941.94	1045288.80
316	156974.10	1045274.73
317	156937.07	1045388.40
318	156724.77	1045478.15
319	156614.88	1045526.30
320	156916.97	1045287.72
321	156305.09	1045601.32
322	156926.74	1045262.75
323	156912.77	1045255.33
324	156920.93	1045239.96
325	156888.89	1045222.94
326	156854.26	1045224.51
327	156851.90	1045193.56

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
328	156885.16	1045144.31
329	156921.48	1045161.62
330	156988.48	1045197.31
331	156981.40	1045210.53
332	156960.41	1045199.29
355	157000.28	1045278.56
356	156990.26	1045255.65
357	157024.49	1045267.96
358	157095.37	1045098.56
359	157087.66	1045021.77
360	157097.58	1044962.38
361	157115.05	1044911.12
362	157143.27	1044926.21
363	157129.15	1044967.65

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
364	157119.22	1045027.04
365	157125.26	1045087.11
366	157013.18	1045307.84
367	157031.30	1045283.54
368	157111.25	1045092.48
369	157104.43	1045024.57
370	157114.35	1044965.18
371	157130.04	1044919.14
372	157047.61	1045336.82
373	156971.17	1045146.12
374	157232.65	1045045.99
375	157262.30	1044989.90

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GEOMETRY LAYOUT PLAN – ALT 2 & ADD ALT 3

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

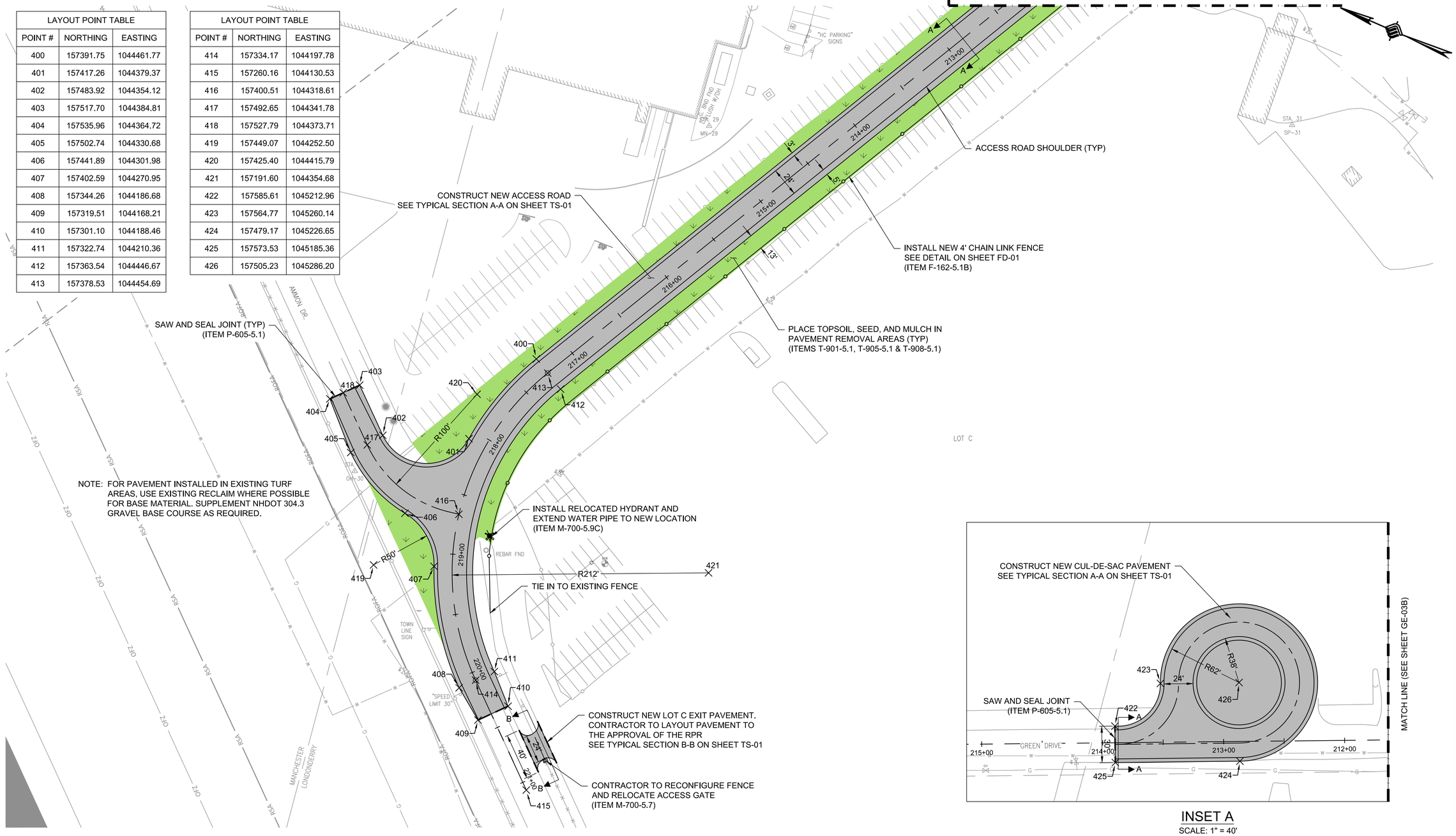
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GE-03B

SHEET 31 OF 90
REV

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
400	157391.75	1044461.77
401	157417.26	1044379.37
402	157483.92	1044354.12
403	157517.70	1044384.81
404	157535.96	1044364.72
405	157502.74	1044330.68
406	157441.89	1044301.98
407	157402.59	1044270.95
408	157344.26	1044186.68
409	157319.51	1044168.21
410	157301.10	1044188.46
411	157322.74	1044210.36
412	157363.54	1044446.67
413	157378.53	1044454.69

LAYOUT POINT TABLE		
POINT #	NORTHING	EASTING
414	157334.17	1044197.78
415	157260.16	1044130.53
416	157400.51	1044318.61
417	157492.65	1044341.78
418	157527.79	1044373.71
419	157449.07	1044252.50
420	157425.40	1044415.79
421	157191.60	1044354.68
422	157585.61	1045212.96
423	157564.77	1045260.14
424	157479.17	1045226.65
425	157573.53	1045185.36
426	157505.23	1045286.20



INSET A
SCALE: 1" = 40'

LEGEND:

- PAVEMENT
- OVERLAY PAVEMENT
- GRASSED AREA
- SAW AND SEAL JOINT

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET GE-01 FOR GEOMETRY LAYOUT NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GEOMETRY LAYOUT PLAN – ALT 2

SCALE: 1" = 40' | DATE: MARCH 2022

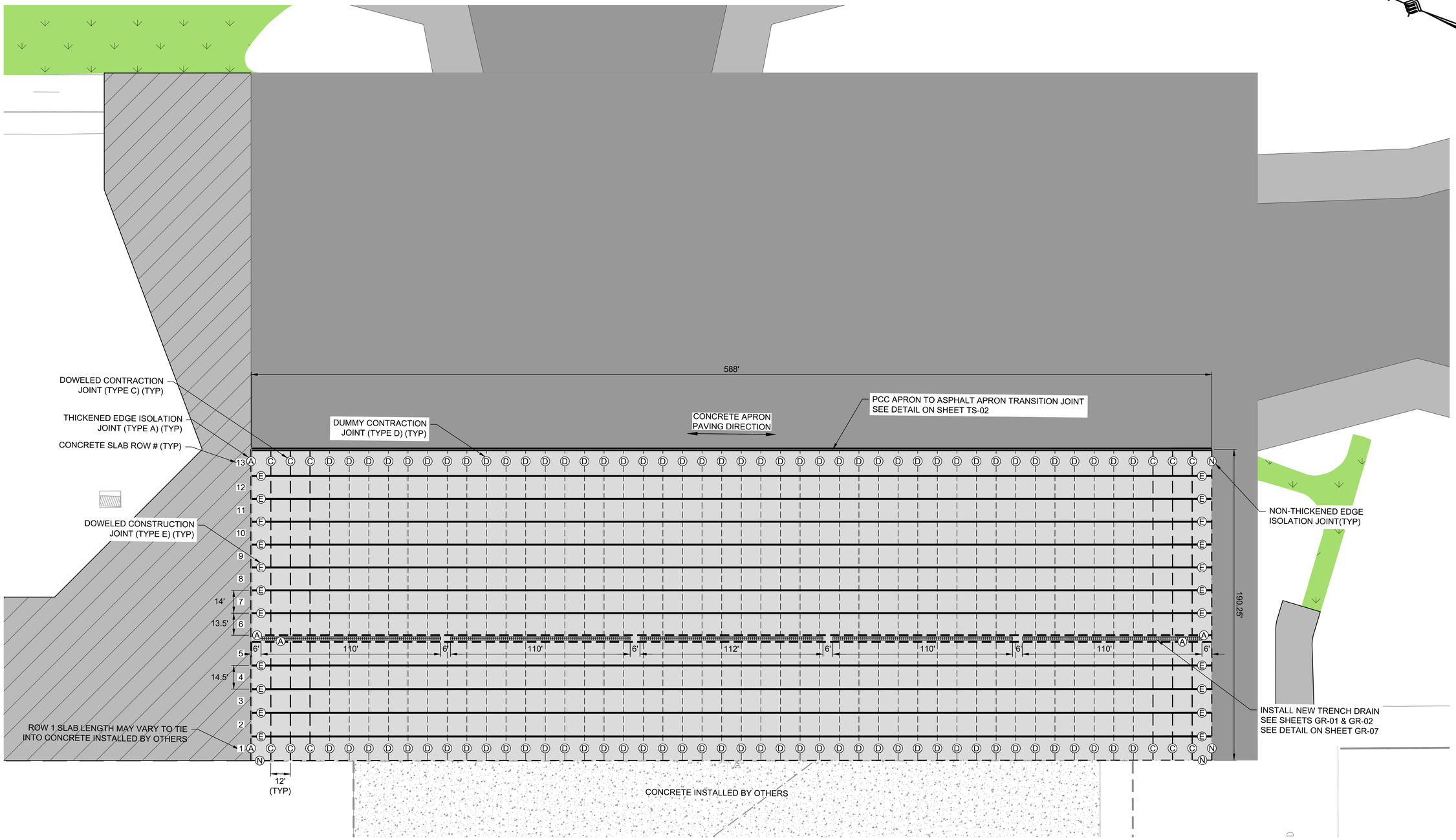
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GE-04B

SHEET 32 OF 90 REV



LEGEND

- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON
- GRASSED AREA
- TSA — TAXIWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- A — THICKENED EDGE ISOLATION JOINT (TYPE A)
- C — DOWELED CONTRACTION JOINT (TYPE C)
- D — DUMMY CONTRACTION JOINT (TYPE D)
- E — DOWELED CONSTRUCTION JOINT (TYPE E)
- N — NON-THICKENED EDGE ISOLATION JOINT
- PCC APRON TO ASPHALT APRON TRANSITION JOINT

SLAB DIMENSIONS

ROW 1: 12' x 14.5' (VARIES TO MATCH CONCRETE BY OTHERS)
ROW 2-5: 12' x 14.5'
ROW 6: 12' x 13.5'
ROW 7-13: 12' x 14'

NOTES:
1. SEE SHEET TS-02 FOR DETAILS.
2. DOWELED CONTRACTION JOINTS (TYPE C) MAY BE SUBSTITUTED FOR DOWELED CONSTRUCTION JOINTS (TYPE E).

ENGINEER'S SEAL
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DESIGNED BY: DPB | DRAWN BY: RHL | CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CONCRETE APRON
LAYOUT PLAN - BASE BID

SCALE: 1" = 30' | DATE: MARCH 2022

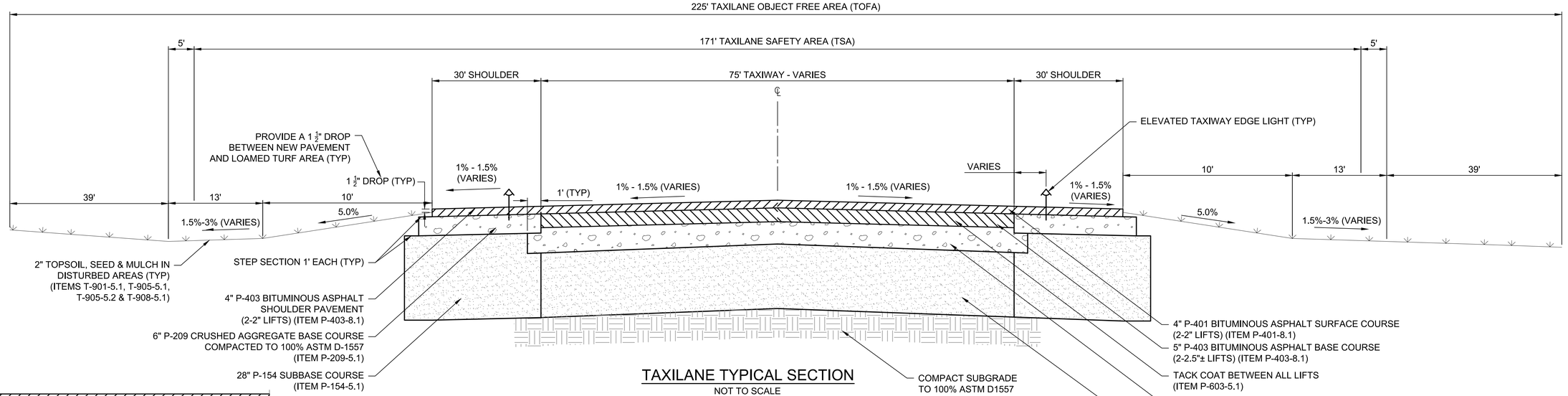
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

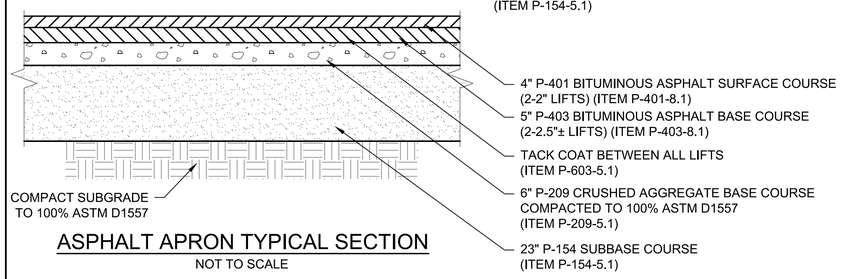
DRAWING NO.
GE-05

SHEET 33 OF 90
REV



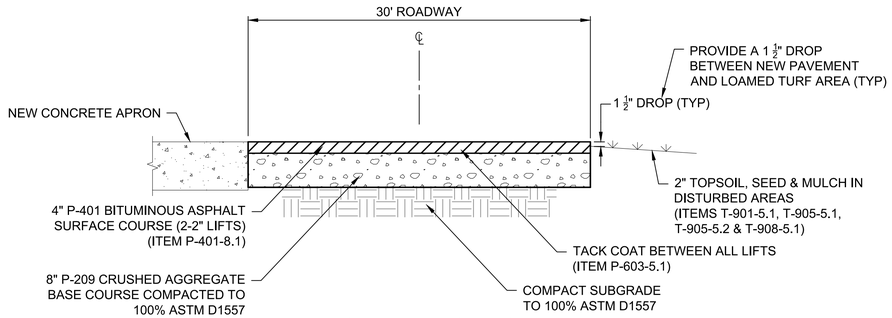
TAXILANE TYPICAL SECTION

NOT TO SCALE



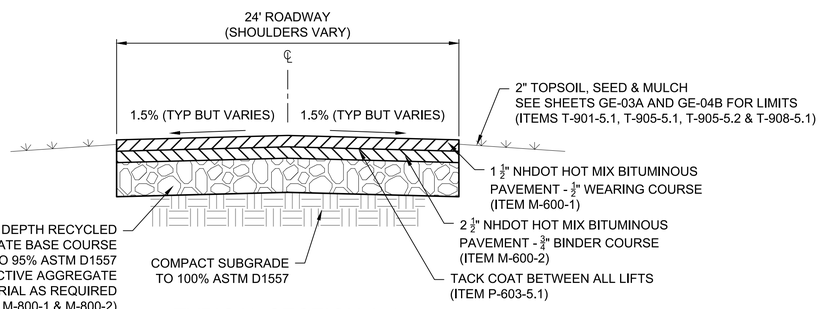
ASPHALT APRON TYPICAL SECTION

NOT TO SCALE



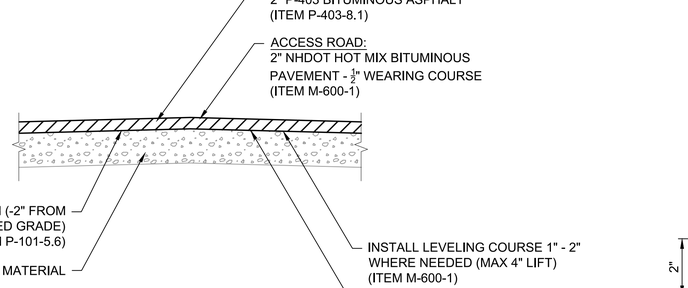
VEHICLE SERVICE ROAD TYPICAL SECTION

NOT TO SCALE



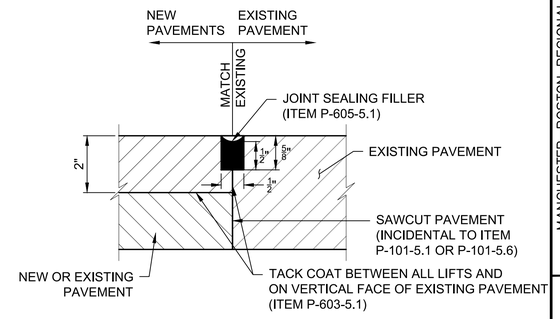
TYPICAL SECTION A-A

NOT TO SCALE



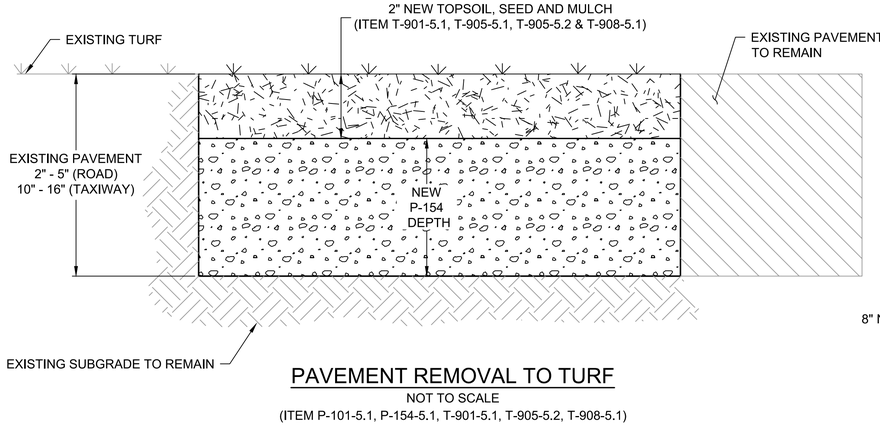
COLD MILLING DETAIL

NOT TO SCALE



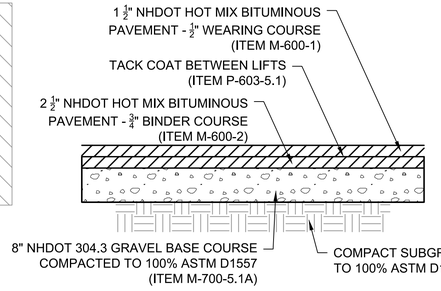
PAVEMENT TIE-IN AND JOINT SEALING FILLER DETAIL

NOT TO SCALE
(ITEM P-605-5.1)



PAVEMENT REMOVAL TO TURF

NOT TO SCALE
(ITEM P-101-5.1, P-154-5.1, T-901-5.1, T-905-5.2, T-908-5.1)



TYPICAL SECTION B-B

NOT TO SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

TYPICAL SECTIONS (1 OF 2)

SCALE: NTS | DATE: MARCH 2022

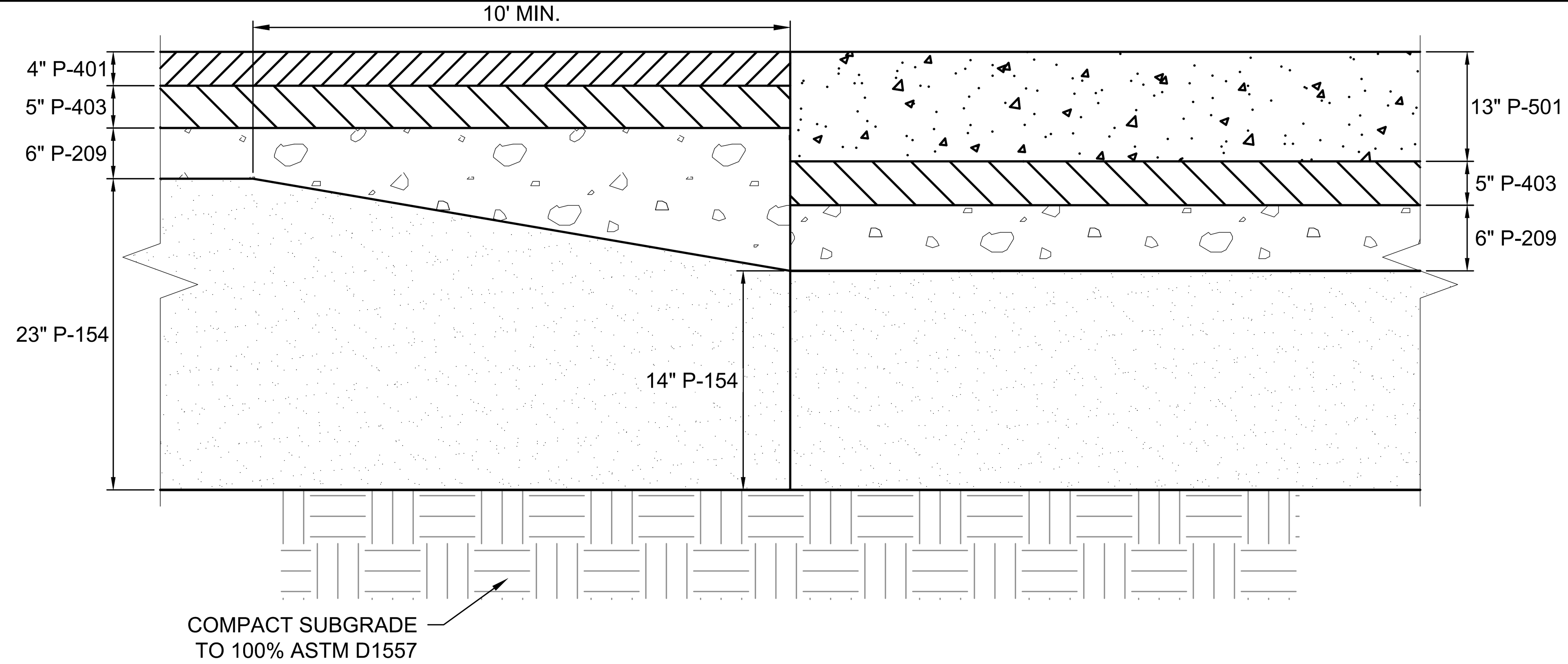
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

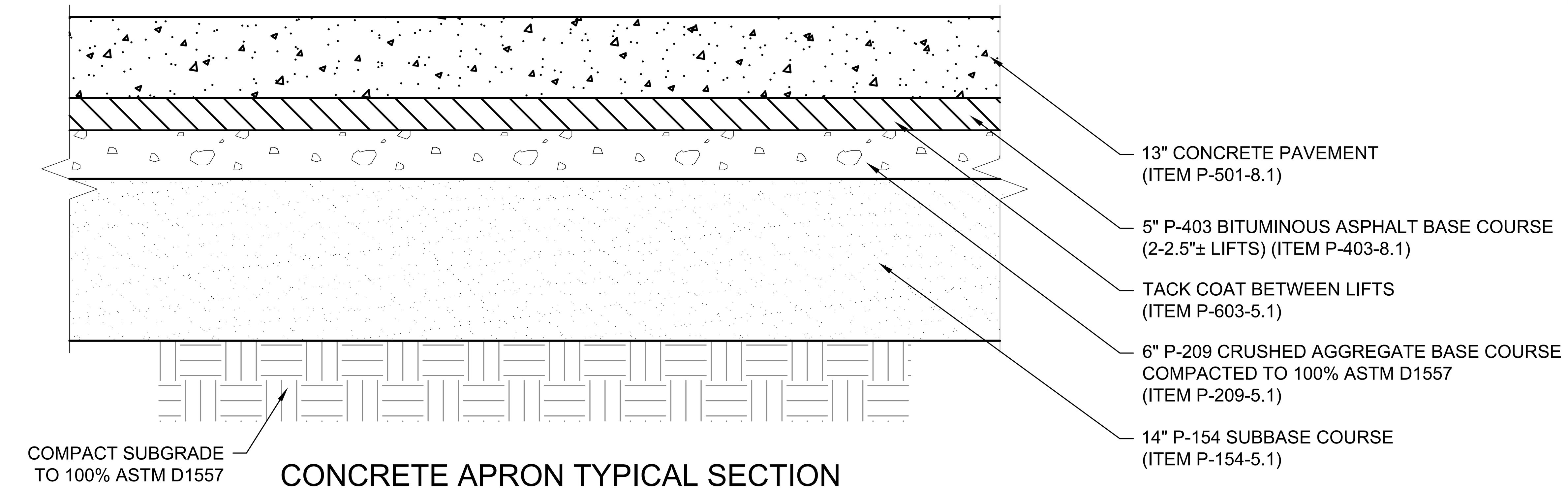
DRAWING NO.
TS-01

SHEET 34 OF 90
REV



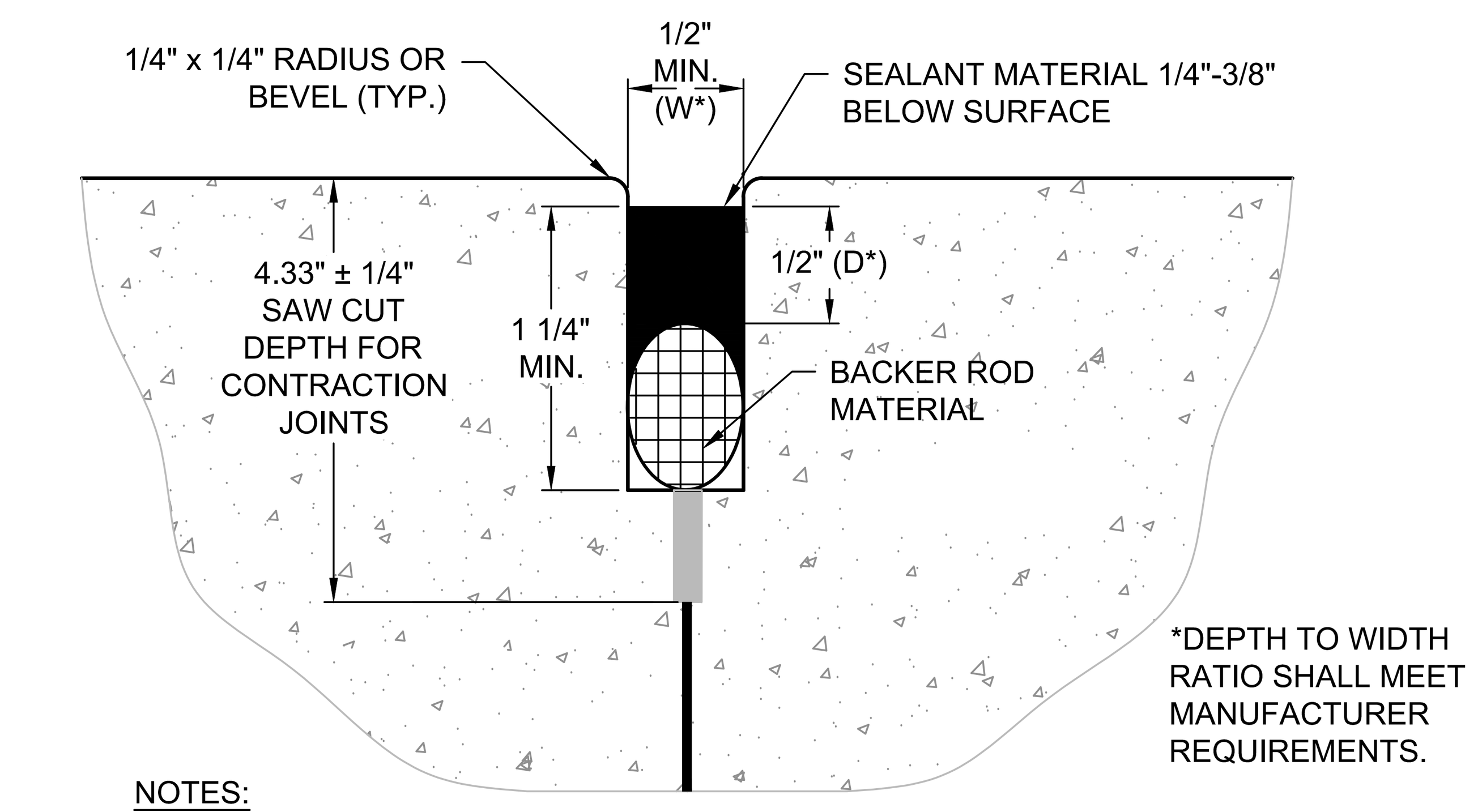
PCC APRON TO ASPHALT APRON TRANSITION DETAIL

NOT TO SCALE



CONCRETE APRON TYPICAL SECTION

NOT TO SCALE



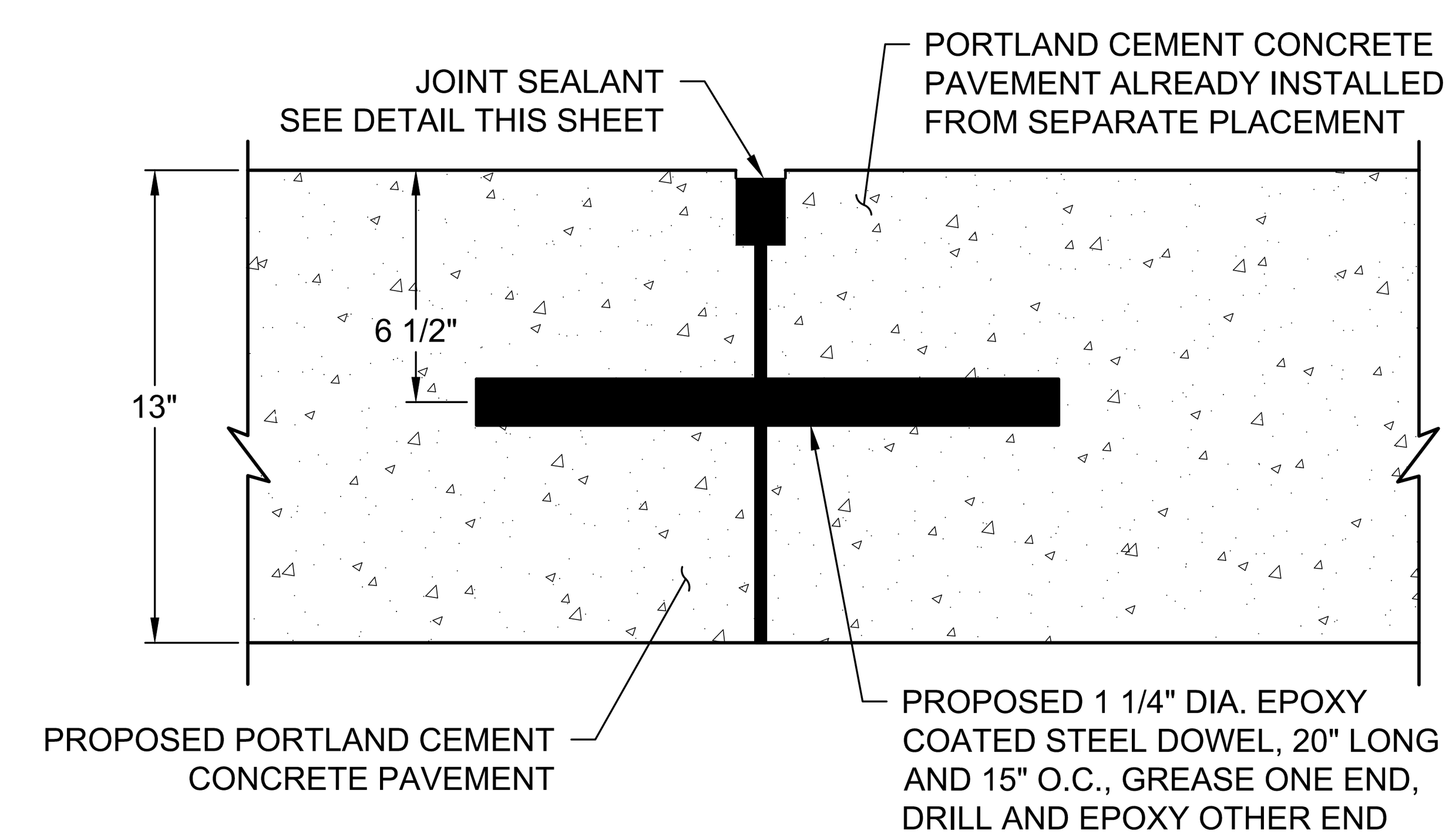
NOTES:

1. SEALANT RESERVOIR SIZED TO PROVIDE PROPER SHAPE FACTOR, W/D, FIELD POURED AND PREFORMED SEALANTS REQUIRE DIFFERENT SHAPE FACTORS FOR OPTIMUM PERFORMANCE.
2. BACKER ROD MATERIAL MUST BE COMPATIBLE WITH THE TYPE OF LIQUID SEALANT USED AND SIZED TO PROVIDE THE DESIRED SHAPE FACTOR.
3. SAWCUT PCC PAVEMENTS AT A DEPTH OF 4.33" ± 1/4" FOR CONTRACTION JOINTS.

CONSTRUCTION/CONTRACTION JOINT SEALANT DETAIL

NOT TO SCALE

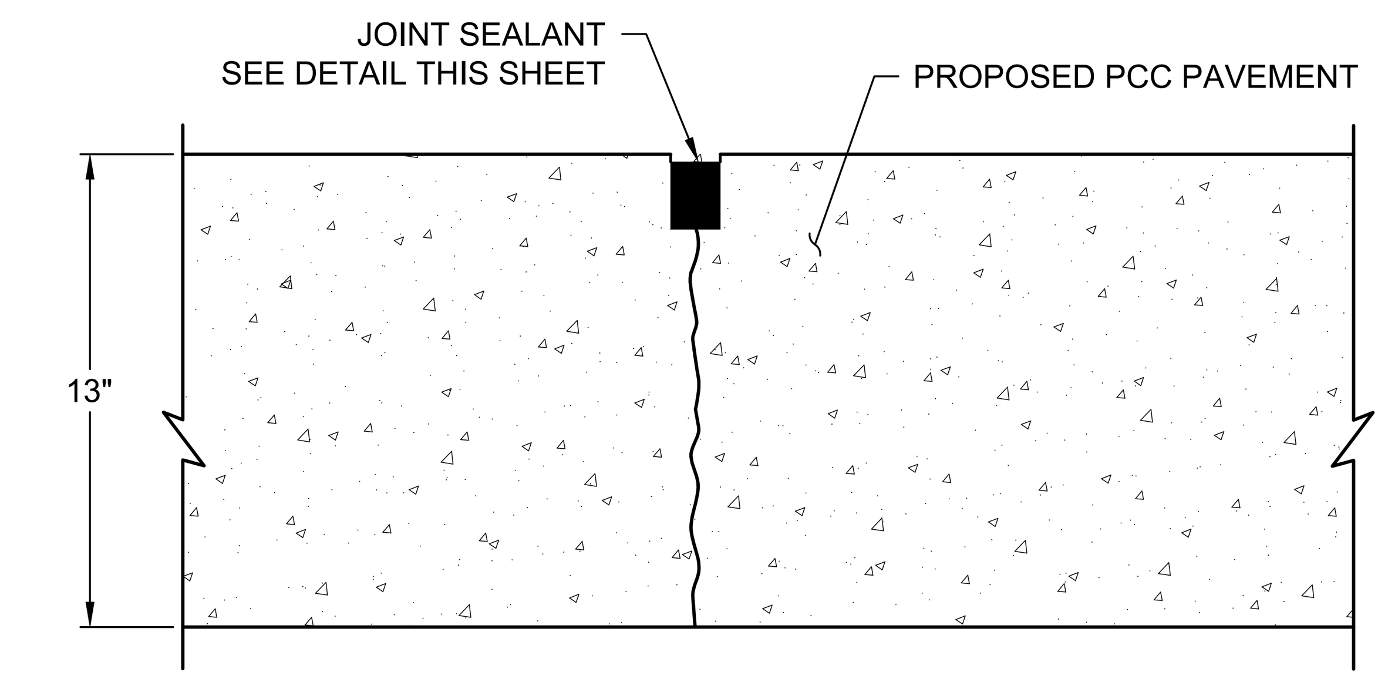
(INCIDENTAL TO ITEM P-501-8.1)



DOWELED CONSTRUCTION JOINT (TYPE E)

NOT TO SCALE

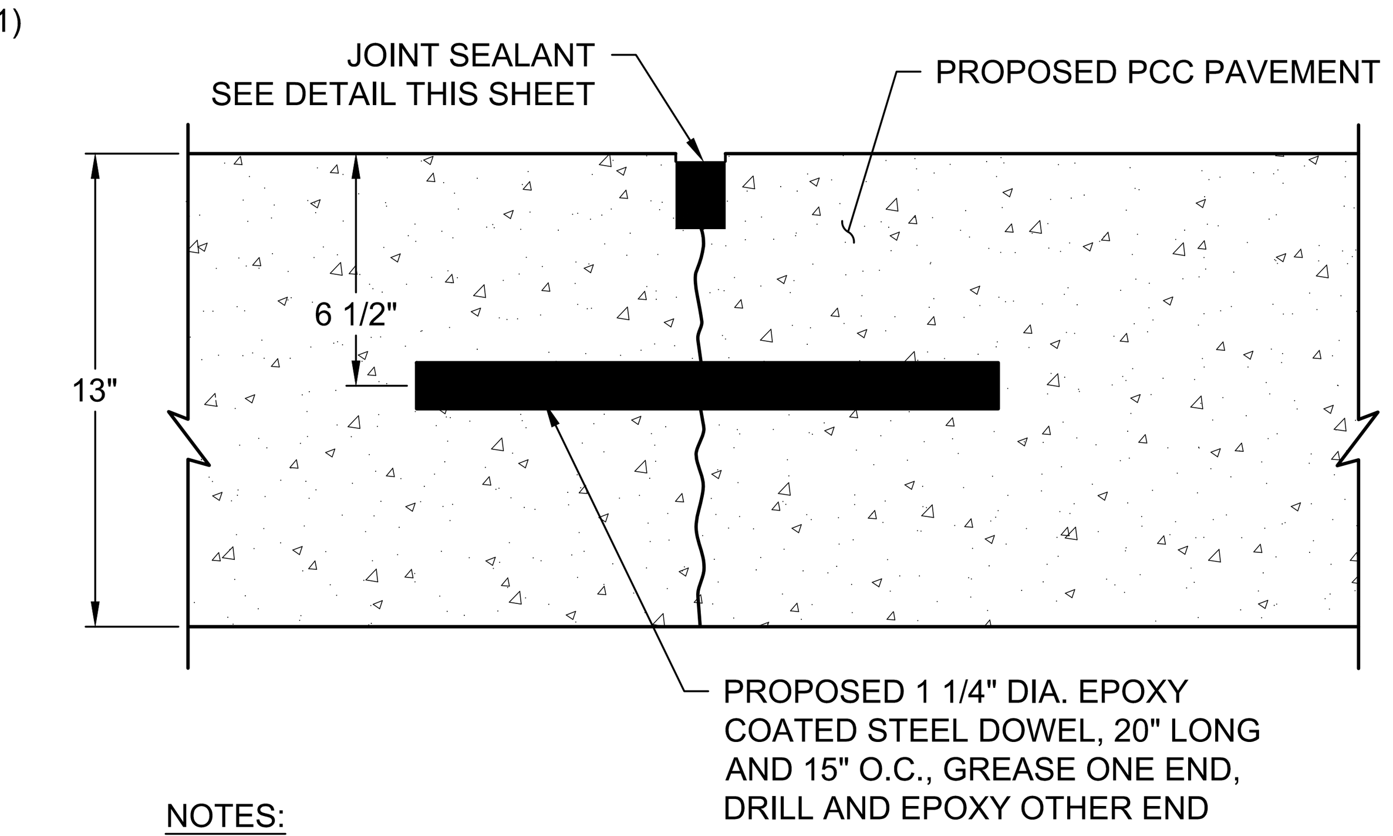
(INCIDENTAL TO ITEM P-501-8.1)



CONTRACTION JOINT (TYPE D DUMMY)

NOT TO SCALE

(INCIDENTAL TO ITEM P-501-8.1)



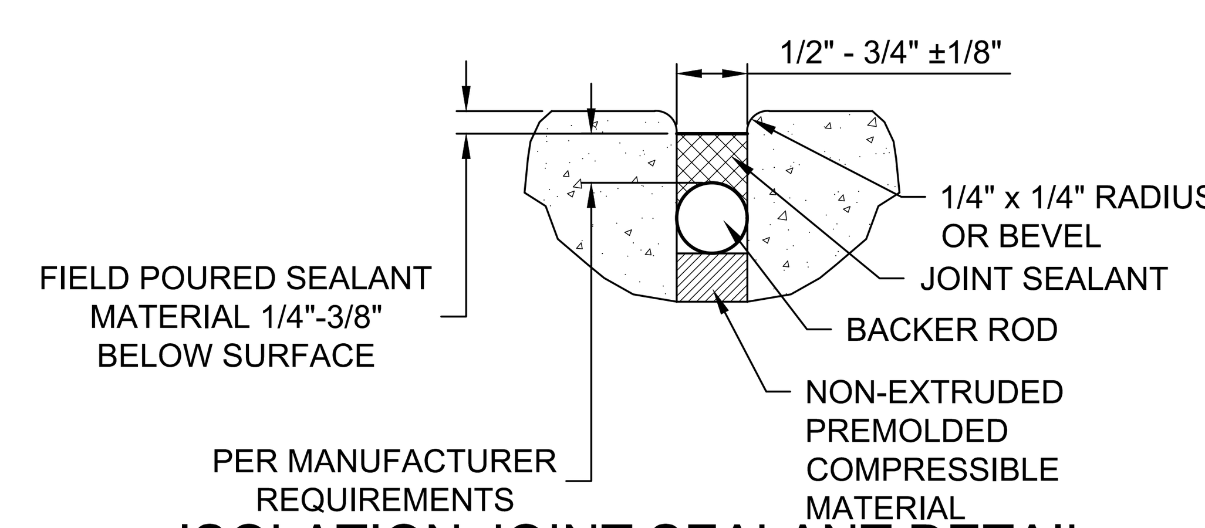
NOTES:

1. MAY BE SUBSTITUTED FOR TYPE E CONSTRUCTION JOINT DEPENDING ON PAVING DIRECTION.

DOWELED CONTRACTION JOINT (TYPE C)

NOT TO SCALE

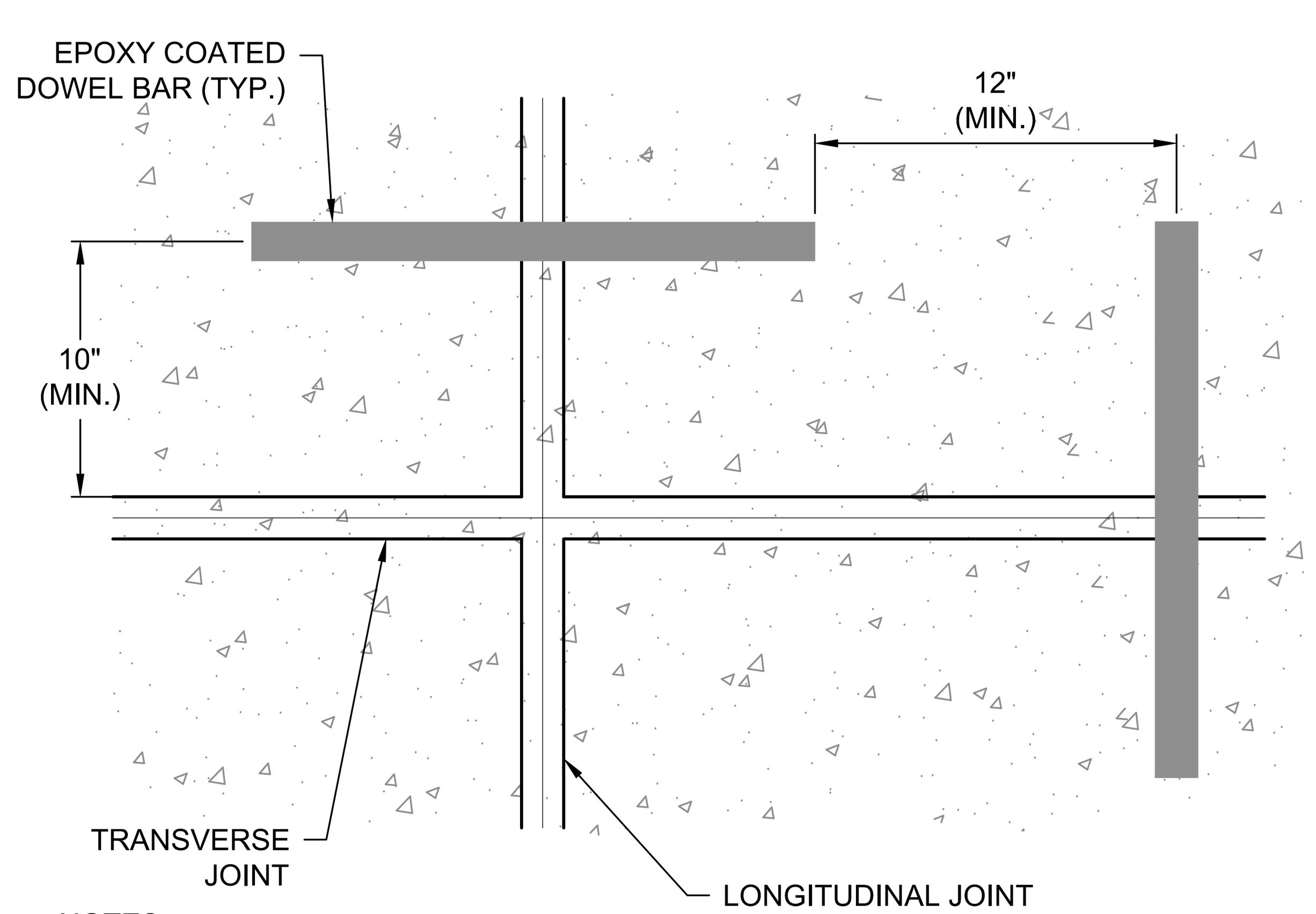
(INCIDENTAL TO ITEM P-501-8.1)



ISOLATION JOINT SEALANT DETAIL

NOT TO SCALE

(INCIDENTAL TO ITEM P-501-8.1)



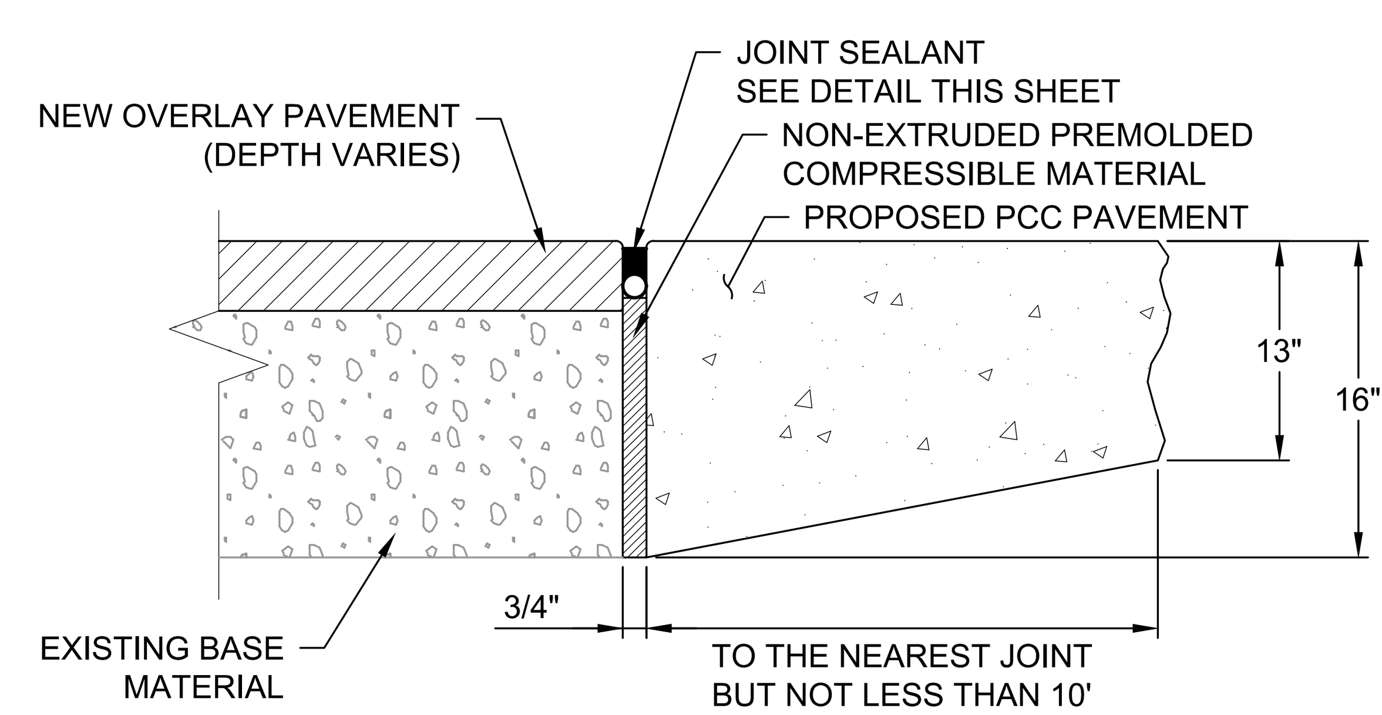
NOTES:

1. ELIMINATE DOWEL FROM LONGITUDINAL JOINT AS NECESSARY TO MAINTAIN 12" FROM END OF TRANSVERSE DOWEL BARS.

DOWEL BAR POSITION DETAIL AT JOINT EDGE

NOT TO SCALE

(INCIDENTAL TO ITEM P-501-8.1)



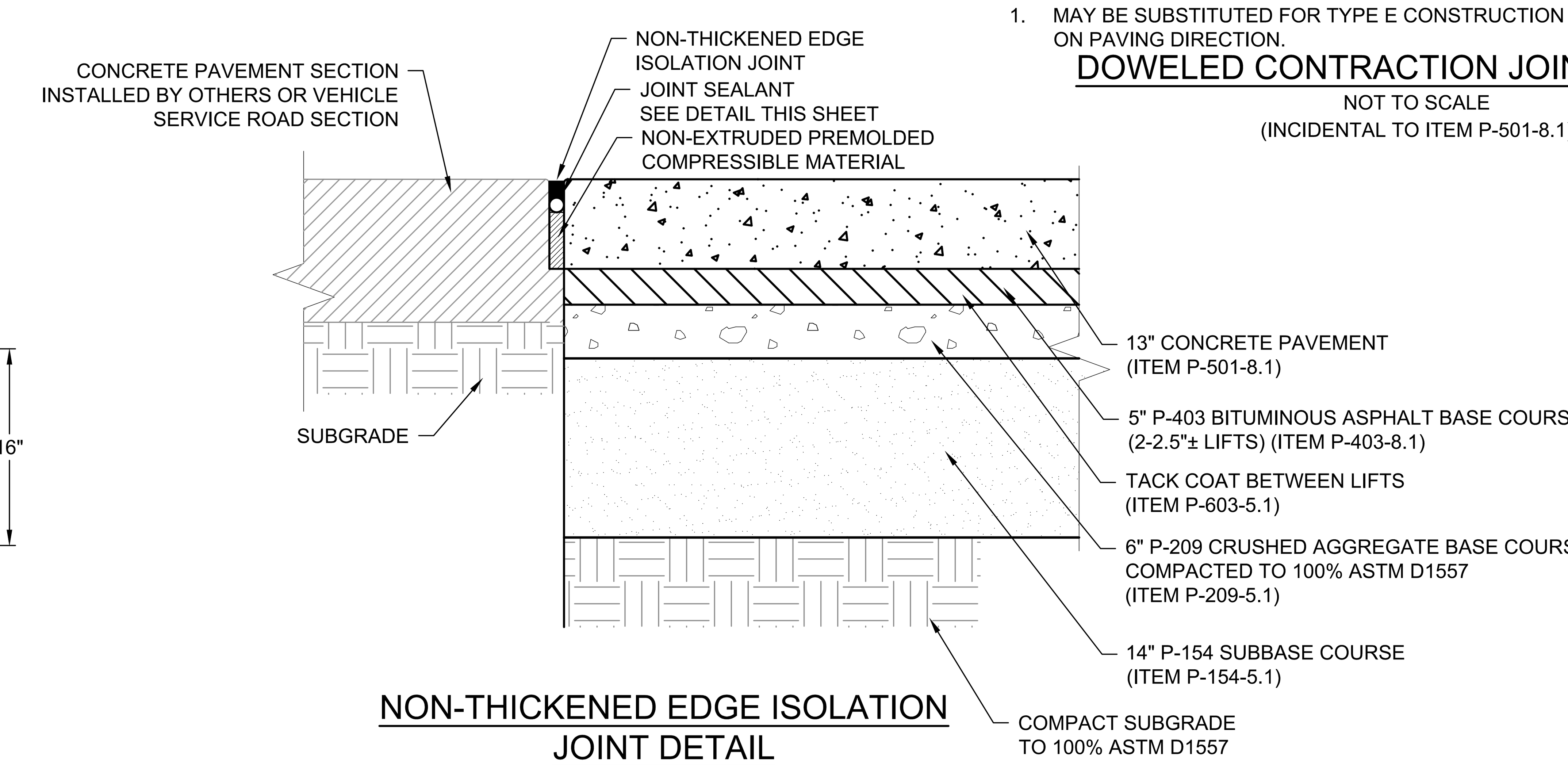
ISOLATION JOINT - TYPE A THICKENED EDGE

NOT TO SCALE

(INCIDENTAL TO ITEM P-501-8.1)

NOTES:

1. SEE SHEET GR-07 FOR THICKENED EDGE ISOLATION JOINT DETAIL AT TRENCH DRAIN.



NON-THICKENED EDGE ISOLATION JOINT DETAIL

NOT TO SCALE

(INCIDENTAL TO ITEM P-501-8.1)

ENGINEER'S SEAL

PROJECT DESIGNER

McFarland Johnson

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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

TYPICAL SECTIONS (2 OF 2)

DATE: MARCH 2022

SCALE: NTS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

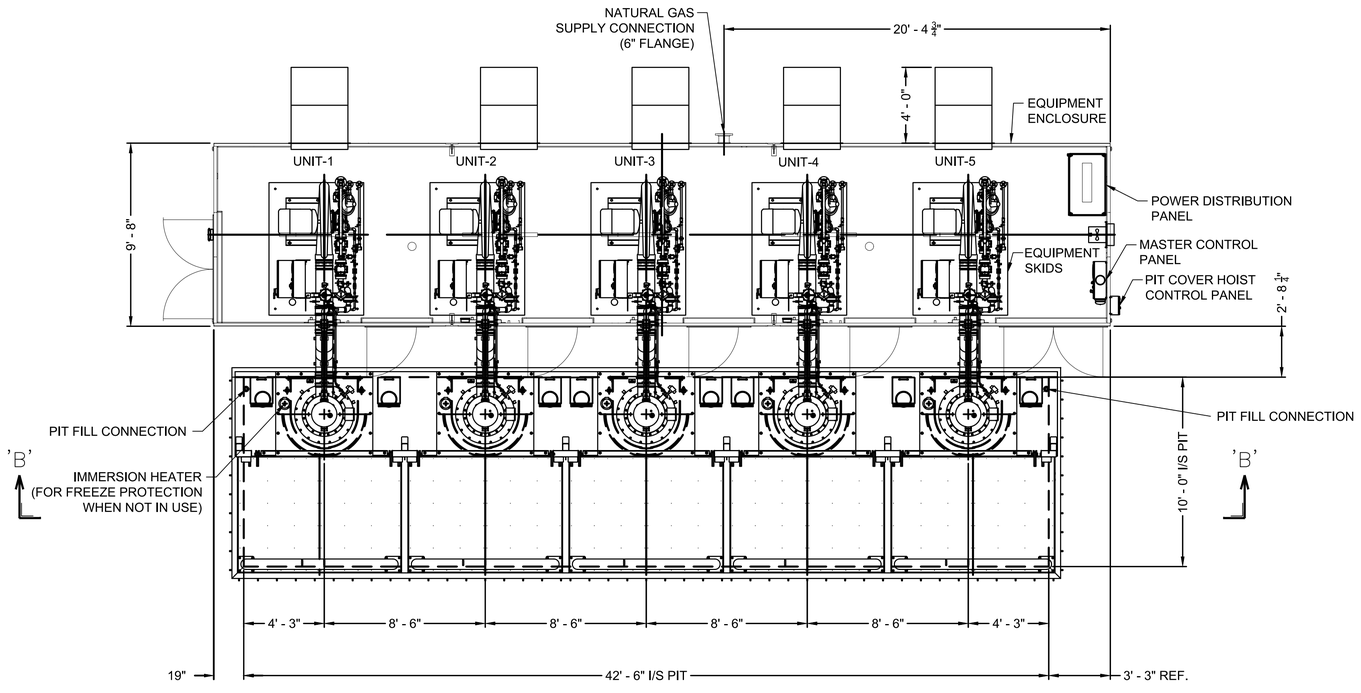
FILE NAME:

AIP No.: 3-33-0011-XXX-2021

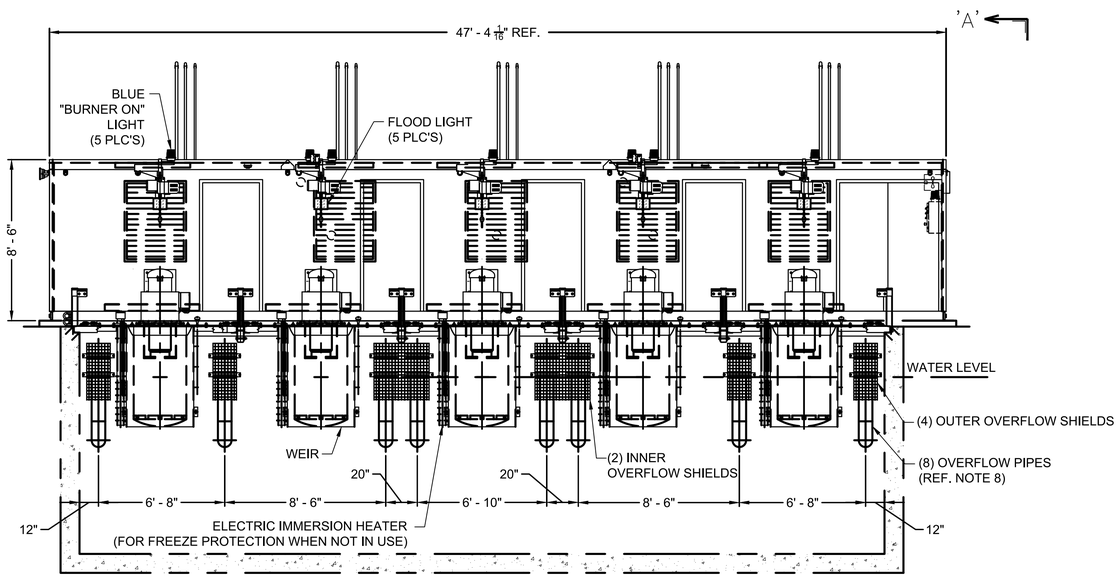
DRAWING NO.

TS-02

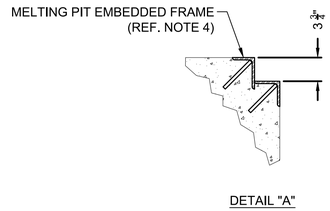
REV



PLAN



SECTION 'B'-'B'



DETAIL "A"

NOTES:

1) APPROXIMATE WEIGHTS:

   EQUIPMENT ENCLOSURE (GROSS): 50,000lbs [22,680 KG]
   BURNER ASSEMBLY (EACH): 2,610lbs [1,184 KG]

2) ANCHORING HARDWARE NOT BY SNOWMELTER EQUIPMENT MANUFACTURER (SMEM) COMBUSTION LIMITED.

3) ALL CONCRETE DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. CONCRETE STRUCTUAL DESIGN AND CONSTRUCTION IS BY OTHERS.

4) MELTING PIT EMBEDDED FRAME MUST BE LEVEL AND FLUSH WITH CONCRETE ON LOADING SIDE.

5) AIR SUPPLY, PILOT GAS AND MAIN GAS PIPING BETWEEN EQUIPMENT SKIDS AND BURNERS ARE SUPPLIED LOOSE BY SMEM. EQUIPMENT SKID VENT PIPING EXTENSIONS ARE SUPPLIED LOOSE BY SMEM. (INSTALLATION BY INSTALLER).

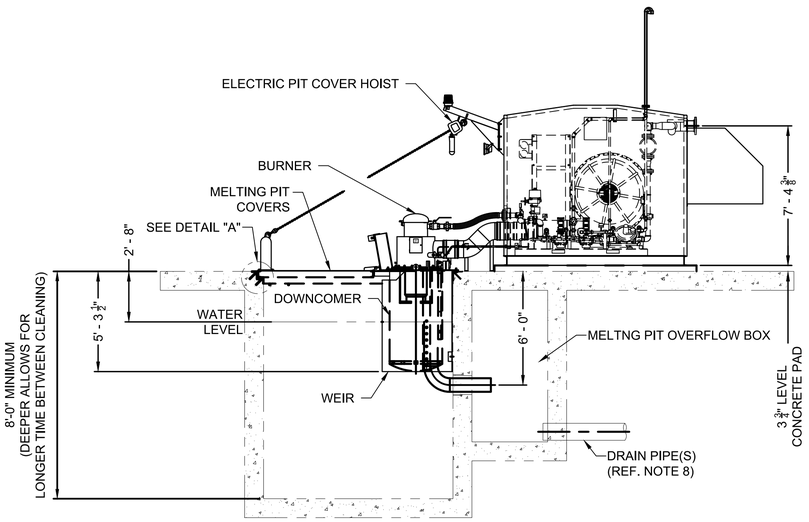
6) GAS SUPPLY MUST BE DESIGNED TO DELIVER 67,500 SCFH [1,806 Nm^3/hr] OF NATURAL GAS AT BETWEEN 5.25 PSI [35 kPa] AND 6.5 PSI [45 Kpa] WITHOUT EXCEEDING 6.5 PSI [45 Kpa] WITH NO FLOW.

7) MAXIMUM ELECTRICAL LOAD WITH OPTIONS SHOWN.
   645 A @ 380V/3PH/50Hz
   396 A @ 480V/3PH/60Hz
   331 A @ 575V/3PH/60Hz

8) OVERFLOW PIPES & DRAIN PIPE(S) FROM MELTING PIT (BY OTHERS) MUST BE CAPABLE OF REMOVING A MINIMUM OF 1800 U.S. GPM [6814 LPM] FROM THE PIT.

9) ANY ADDITIONAL GUARDS, BARRIERS OR OTHER EQUIPMENT REQUIRED AROUND THE MELTING PIT OPENING OR ANY OTHER AREA IN ORDER TO COMPLY WITH LOCAL REQUIREMENTS (E.G. BUILDING CODES, OCCUPATIONAL HEALTH AND SAFETY REGULATIONS, ETC.) NOT SPECIFICALLY STATED AS BEING SUPPLIED BY SMEM MUST BE SUPPLIED BY INSTALLATION CONTRACTOR.

10) SOME EQUIPMENT SHOWN IS OPTIONAL, THERE ARE MORE OPTIONAL ITEMS WHICH ARE NOT SHOWN.



VIEW 'A'-'A'

SNOWMELTER GENERAL ARRANGEMENT DETAIL

NOT TO SCALE
(ITEM M-300-1)
BASIS OF DESIGN: TRECAN 300-SG OR EQUIVALENT

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095
DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

SNOWMELTER DETAILS (1 OF 2)

SCALE: NTS | DATE: MARCH 2022

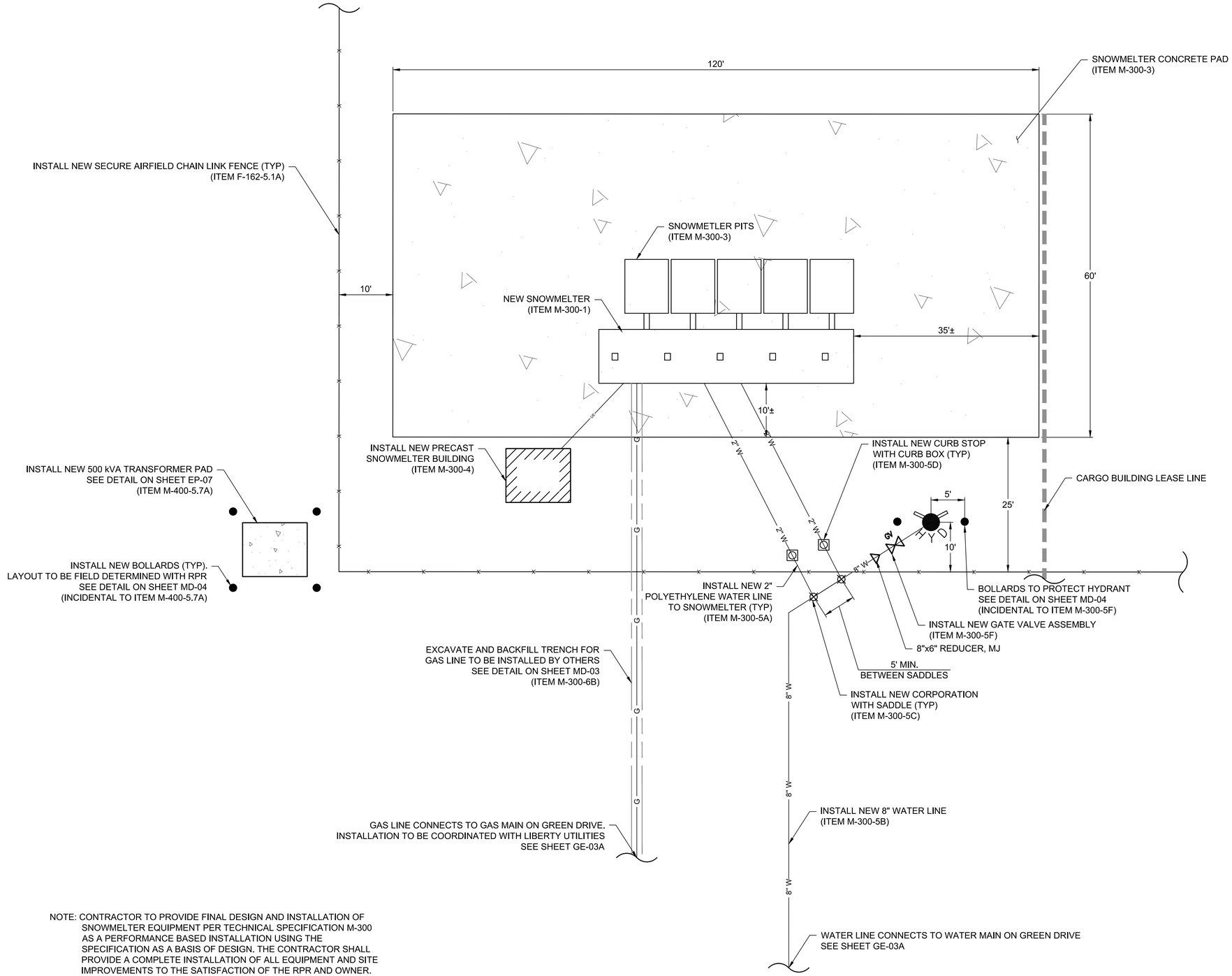
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MD-01

SHEET 36 OF 90
REV



NOTE: CONTRACTOR TO PROVIDE FINAL DESIGN AND INSTALLATION OF SNOWMELTER EQUIPMENT PER TECHNICAL SPECIFICATION M-300 AS A PERFORMANCE BASED INSTALLATION USING THE SPECIFICATION AS A BASIS OF DESIGN. THE CONTRACTOR SHALL PROVIDE A COMPLETE INSTALLATION OF ALL EQUIPMENT AND SITE IMPROVEMENTS TO THE SATISFACTION OF THE RPR AND OWNER.

SNOWMELTER LAYOUT AND UTILITIES DETAIL

NOT TO SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
RYAN L. BRUNA
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
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DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

SNOWMELTER DETAILS (2 OF 2)

SCALE: NTS | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

FILE NAME:

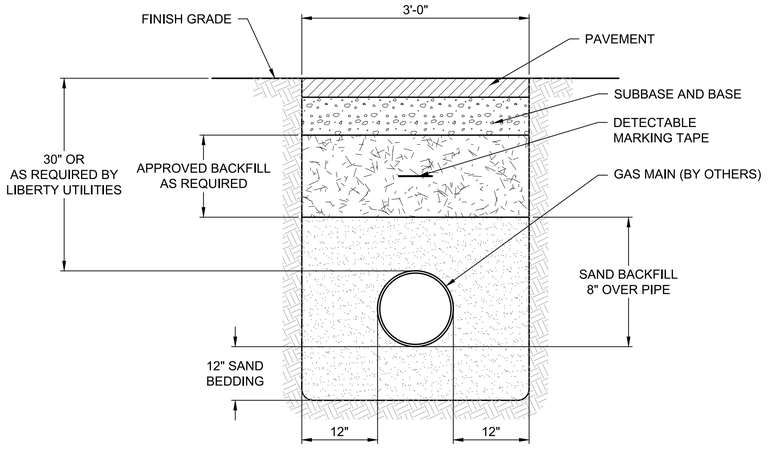
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.

MD-02

SHEET 37 OF 90

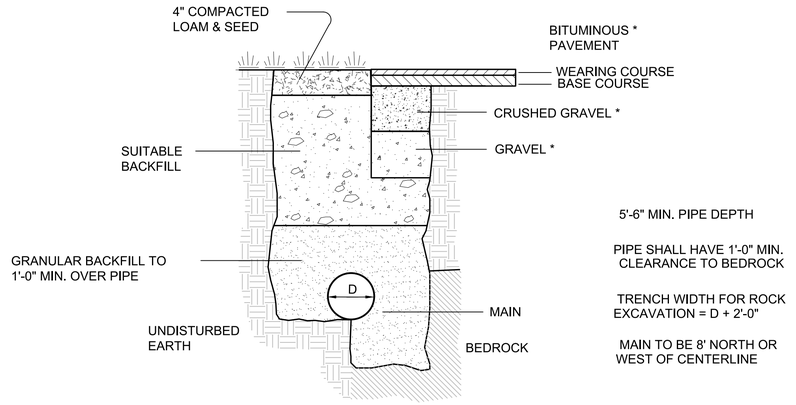
REV



GAS TRENCH DETAIL

NOT TO SCALE
(ITEM M-300-6B)

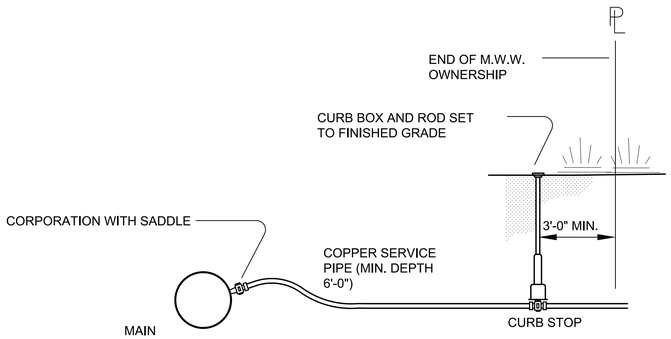
* REFER TO ACCESS ROAD TYPICAL SECTION DETAIL ON SHEET TS-01



MANCHESTER WATER WORKS STANDARD DETAIL

WATER LINE TRENCH DETAIL

NOT TO SCALE
(ITEM M-300-5B)



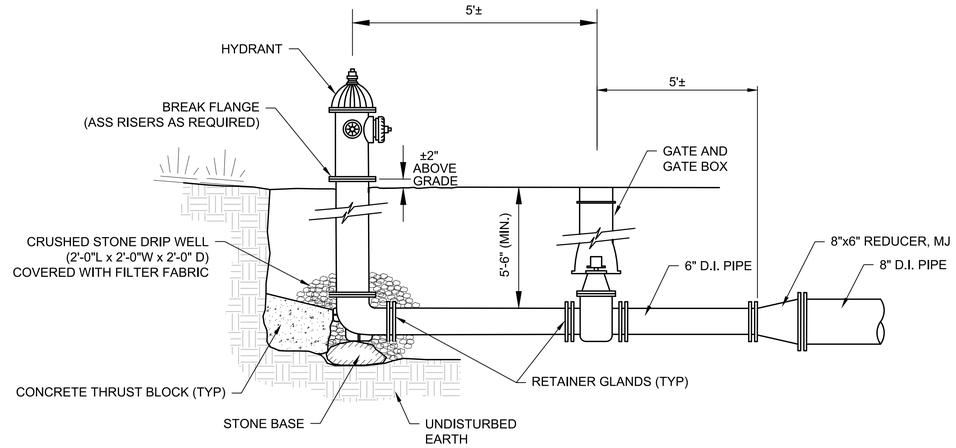
MANCHESTER WATER WORKS STANDARD DETAIL

WATER SERVICE CONNECTION DETAIL

NOT TO SCALE
(INCIDENTAL TO ITEM M-300-5D)

NOTES:

1. CORPORATIONS SHALL BE TAPPED DIRECTLY TO THE MAIN IN SIZES UP TO 1" Ø (INCLUSIVE).
2. CORPORATIONS 1-1/2"Ø AND GREATER SHALL BE INSTALLED USING A TAPPING SADDLE AND SHELL CUTTER.
3. CURB STOP TO BE FIELD LOCATED WITH RPR.



MANCHESTER WATER WORKS STANDARD DETAIL
(AS MODIFIED FOR LOCATION)

NOTE: THRUST BLOCKS PER MANCHESTER WATER WORKS STANDARD.

HYDRANT INSTALLATION DETAIL

NOT TO SCALE
(ITEM M-300-5F)

ENGINEER'S SEAL
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DESIGNED BY DPB
DRAWN BY RHL
CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

UTILITY DETAILS

SCALE: NTS
DATE: MARCH 2022

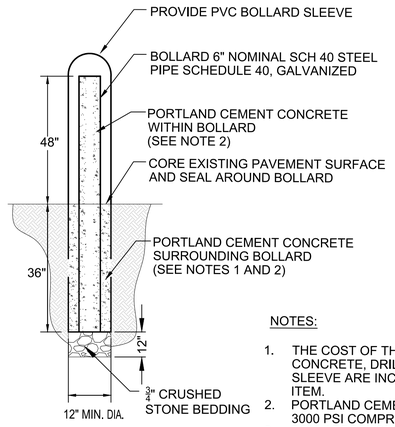
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MD-03

SHEET 38 OF 90
REV

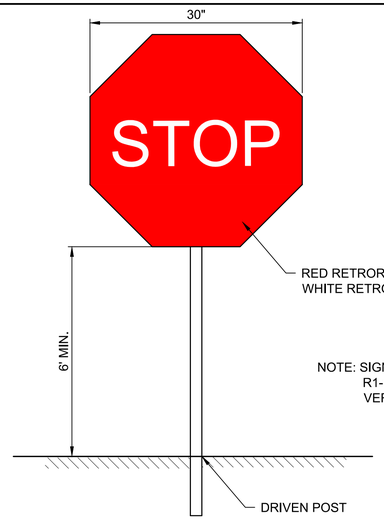


NOTES:

1. THE COST OF THE PORTLAND CEMENT CONCRETE, DRILLING, SEALING, AND SLEEVE ARE INCLUDED IN THE BOLLARD ITEM.
2. PORTLAND CEMENT CONCRETE TO BE 3000 PSI COMPRESSIVE STRENGTH.
3. BOLLARDS INCIDENTAL TO VARIOUS ITEMS.

BOLLARD DETAIL

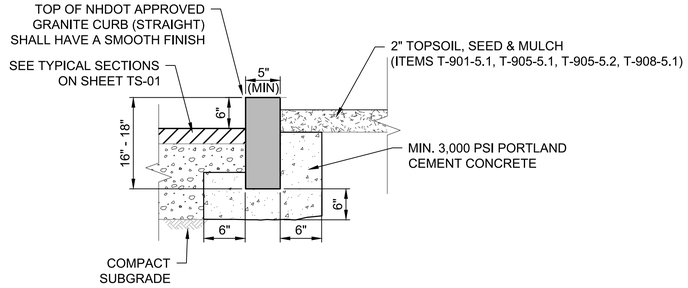
NOT TO SCALE
(INCIDENTAL TO ITEM M-400-5.7A)



NOTE: SIGN SHALL BE MUTCD STOP SIGN R1-1. SIGN TO CONFORM TO LATEST VERSION OF MUTCD STANDARDS

ACCESS ROAD STOP SIGN DETAIL

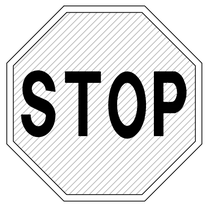
NOT TO SCALE
(ITEM M-700-5.3A)



GRANITE STRAIGHT CURB INSTALLATION DETAIL

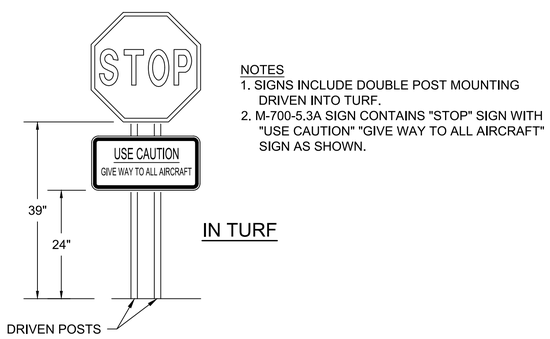
NOT TO SCALE
(ITEM M-700-5.2A & M-400-5.2C)

NOTE: BLACK BORDER AND LETTERS ON YELLOW BACKGROUND



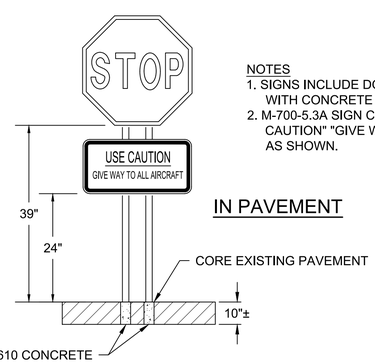
- SIGN SHALL BE MUTCD STOP SIGN R1-1. SIGN TO CONFORM TO LATEST VERSION OF MUTCD STANDARDS
- 24" ACROSS FLATS

COLOR LEGEND:
BACKGROUND - RED (REFLECTIVE)
LETTERS WHITE - (REFLECTIVE)



NOTES
1. SIGNS INCLUDE DOUBLE POST MOUNTING DRIVEN INTO TURF.
2. M-700-5.3A SIGN CONTAINS "STOP" SIGN WITH "USE CAUTION" "GIVE WAY TO ALL AIRCRAFT" SIGN AS SHOWN.

IN TURF

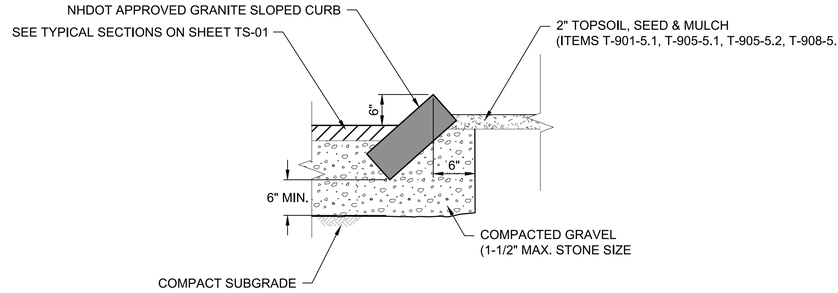


NOTES
1. SIGNS INCLUDE DOUBLE POST MOUNTING WITH CONCRETE BASE.
2. M-700-5.3A SIGN CONTAINS "USE CAUTION" "GIVE WAY TO ALL AIRCRAFT" AS SHOWN.

IN PAVEMENT

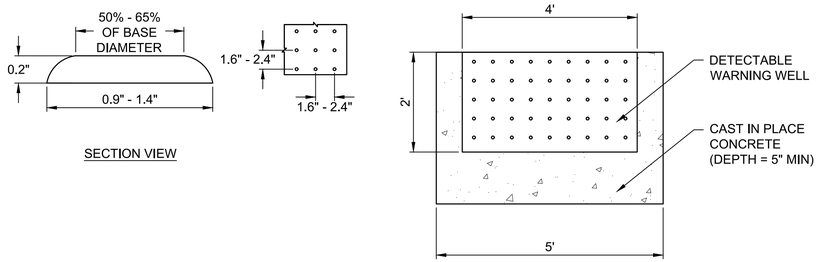
VEHICLE SERVICE ROAD SIGN DETAILS

NOT TO SCALE
(ITEM M-700-5.3A)



GRANITE SLOPED CURB INSTALLATION DETAIL

NOT TO SCALE
(ITEM M-700-5.2B & M-400-5.2D)



DETECTABLE WARNING PANEL DETAIL

NOT TO SCALE
(ITEM M-700-5.4)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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DRAWN BY RHL
CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MISCELLANEOUS DETAILS

SCALE: NTS
DATE: MARCH 2022

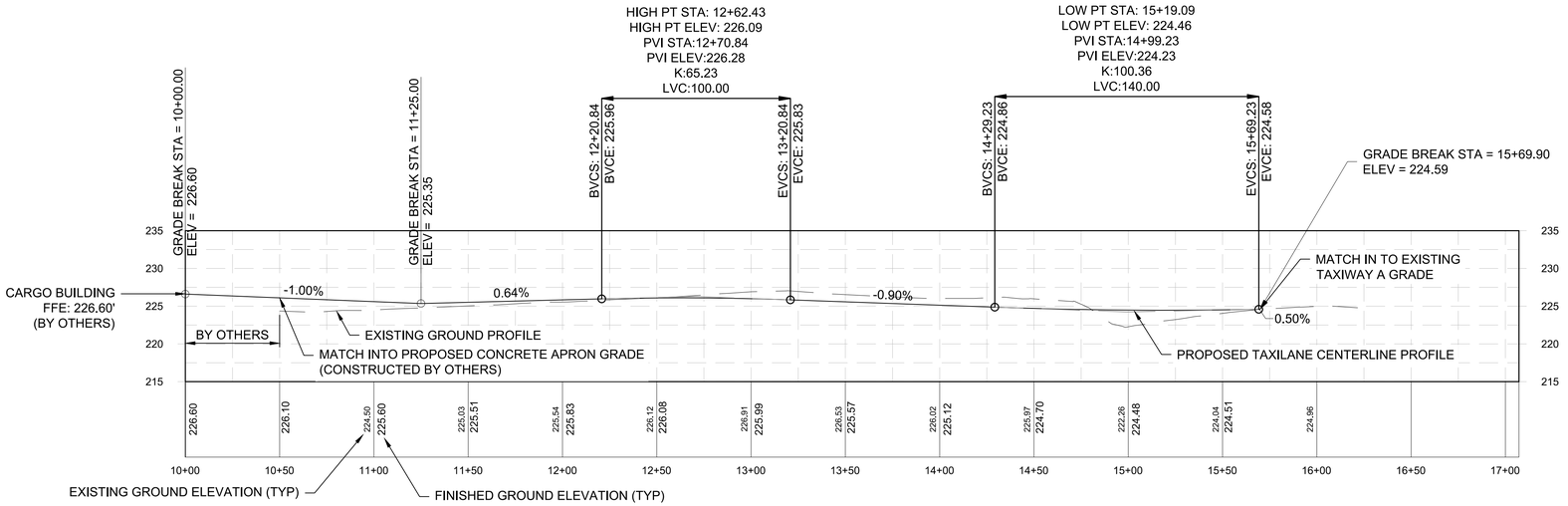
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MD-04

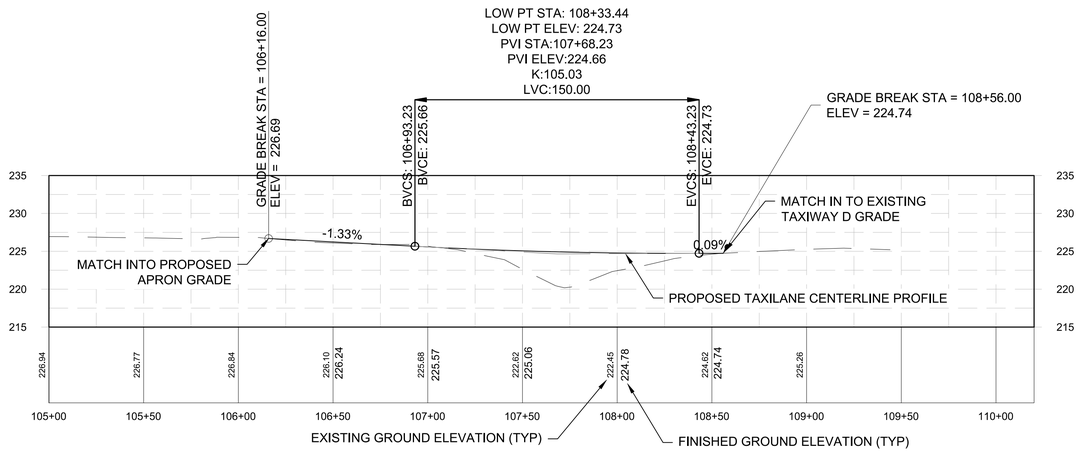
SHEET 39 OF 90
REV



TAXIWAY A CONNECTOR TAXILANE PROFILE
BASE BID

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

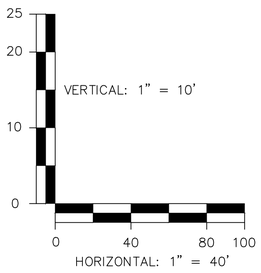
NOTE: SEE ALIGNMENT ON SHEET GE-01



TAXIWAY D CONNECTOR TAXILANE PROFILE
ADD ALT 4

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

NOTE: SEE ALIGNMENT ON SHEET GE-02A



ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN
M.
BENNETT
No. 7410
LICENSED
PROFESSIONAL ENGINEER

PROJECT DESIGNER

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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

TAXILANE PROFILES

SCALE: AS SHOWN | DATE: MARCH 2022

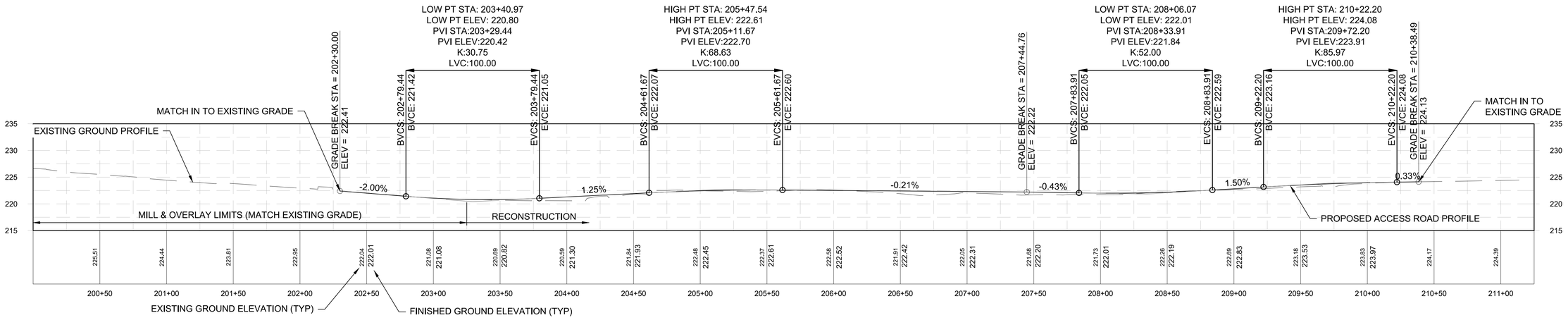
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
PR-01

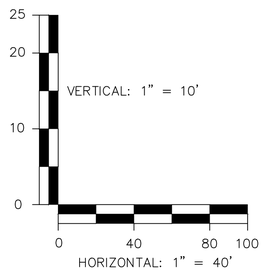
SHEET 40 OF 90
REV



ACCESS ROAD PROFILE
ALTERNATE 1

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 1 IS AWARDED.
2. SEE ALIGNMENT ON SHEET GE-03A



ENGINEER'S SEAL
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BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ACCESS ROAD PROFILE - ALT 1

SCALE: AS SHOWN | DATE: MARCH 2022

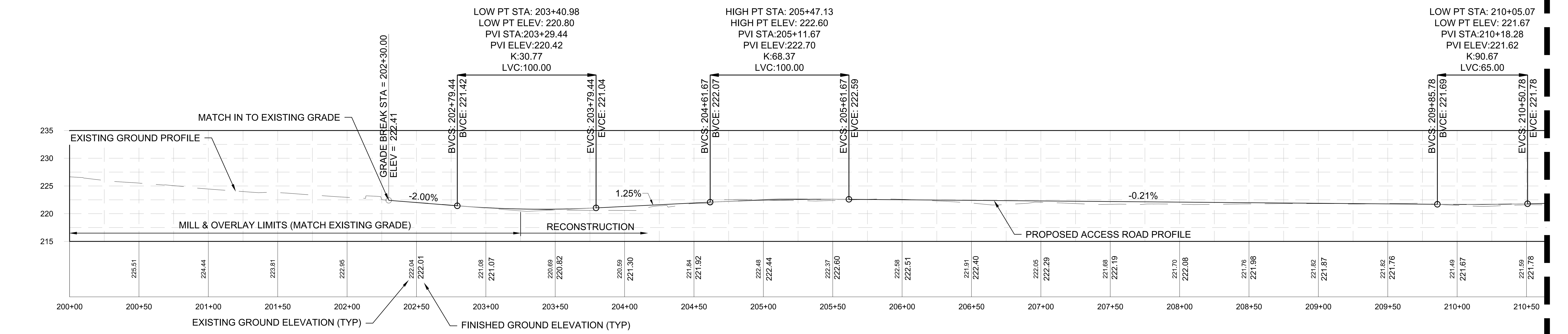
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

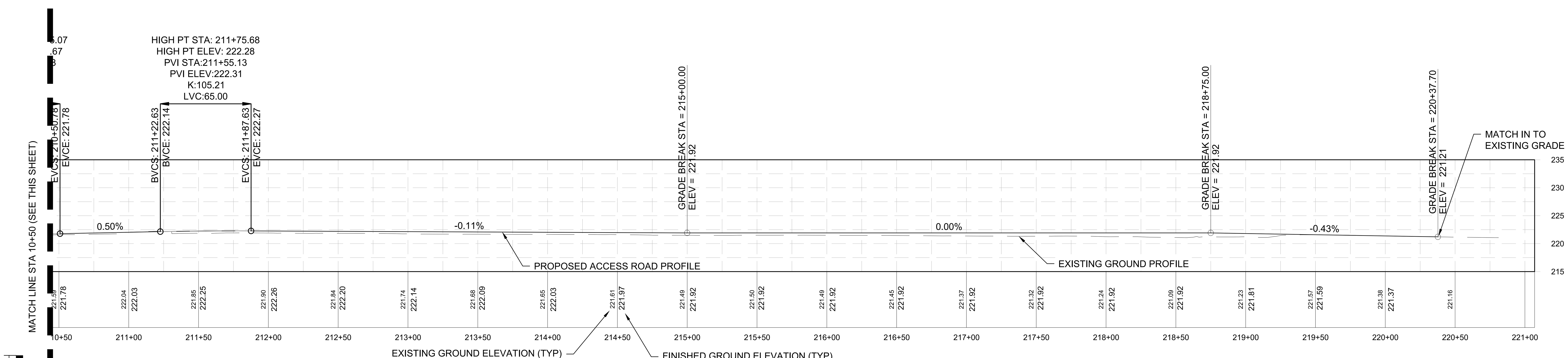
DRAWING NO.
PR-02A

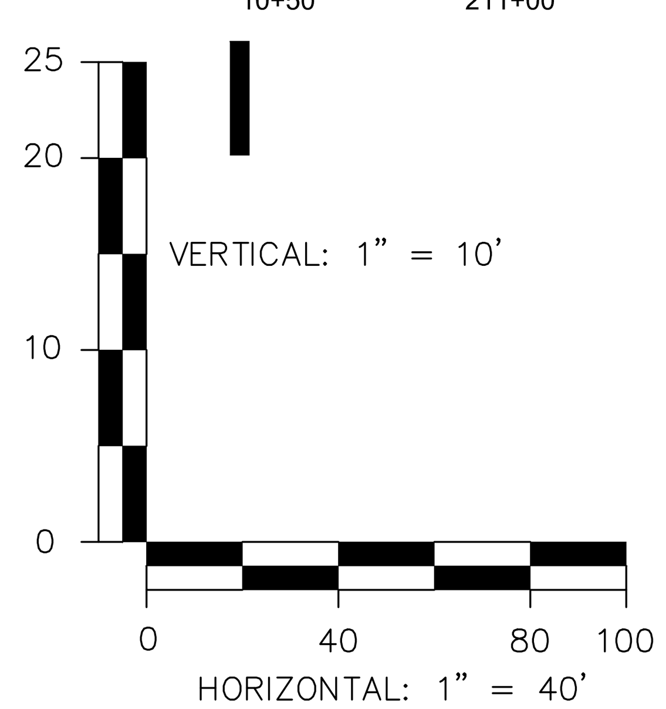
SHEET 41 OF 90 REV



ACCESS ROAD PROFILE
ALTERNATE 2

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'





ACCESS ROAD PROFILE
ALTERNATE 2

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE ALIGNMENT ON SHEETS GE-03B & GE-04B

ENGINEER'S SEAL

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ACCESS ROAD PROFILE – ALT 2

SCALE: AS SHOWN
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.:18700.08
FILE NAME:
AIP No.:3-33-0011-XXX-2021

DRAWING NO.
PR-02B

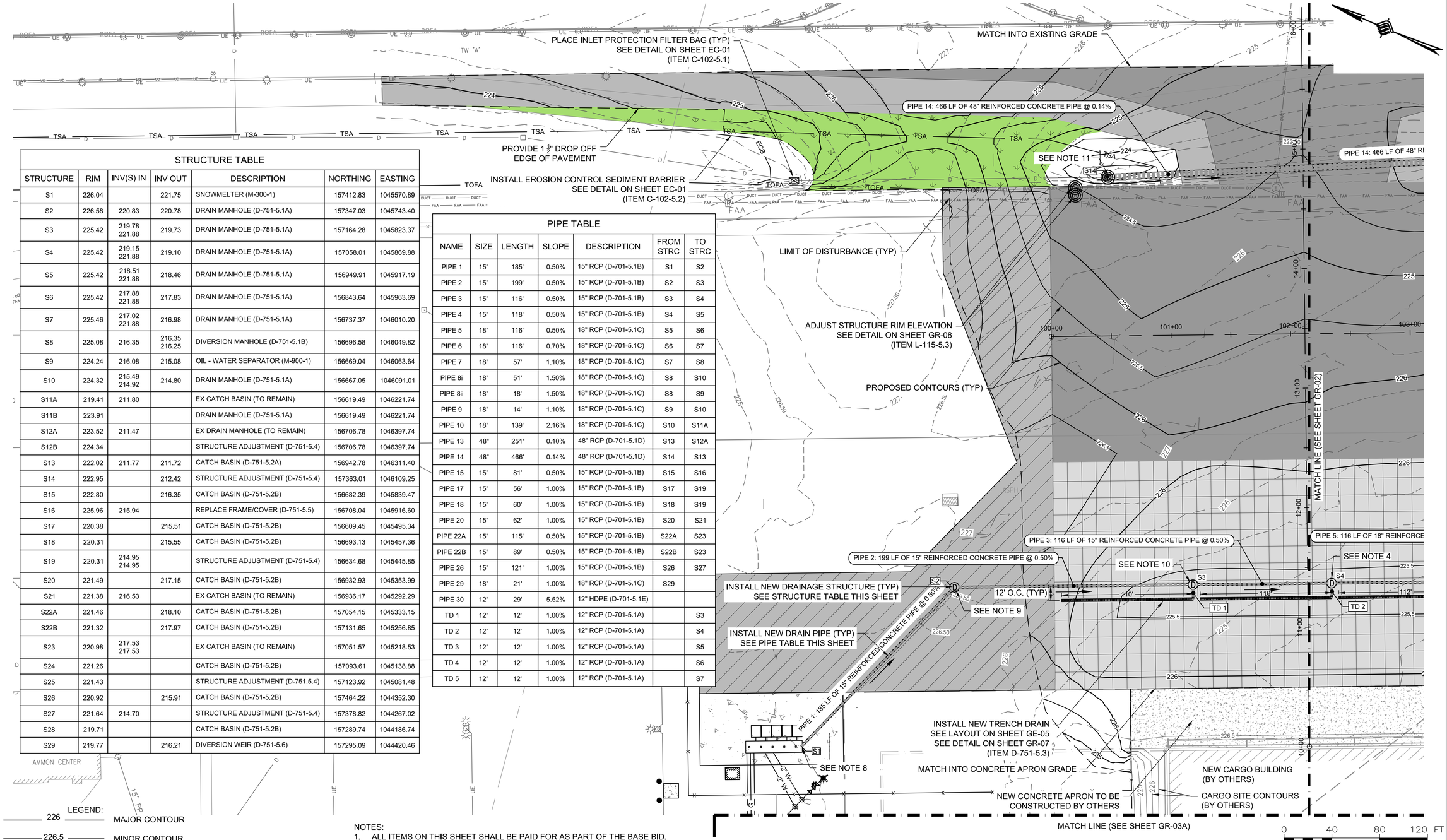
SHEET 42 OF 90 REV

STRUCTURE TABLE

STRUCTURE	RIM	INV(S) IN	INV OUT	DESCRIPTION	NORTHING	EASTING
S1	226.04		221.75	SNOWMELTER (M-300-1)	157412.83	1045570.89
S2	226.58	220.83	220.78	DRAIN MANHOLE (D-751-5.1A)	157347.03	1045743.40
S3	225.42	219.78 221.88	219.73	DRAIN MANHOLE (D-751-5.1A)	157164.28	1045823.37
S4	225.42	219.15 221.88	219.10	DRAIN MANHOLE (D-751-5.1A)	157058.01	1045869.88
S5	225.42	218.51 221.88	218.46	DRAIN MANHOLE (D-751-5.1A)	156949.91	1045917.19
S6	225.42	217.88 221.88	217.83	DRAIN MANHOLE (D-751-5.1A)	156843.64	1045963.69
S7	225.46	217.02 221.88	216.98	DRAIN MANHOLE (D-751-5.1A)	156737.37	1046010.20
S8	225.08	216.35	216.35 216.25	DIVERSION MANHOLE (D-751-5.1B)	156696.58	1046049.82
S9	224.24	216.08	215.08	OIL - WATER SEPARATOR (M-900-1)	156669.04	1046063.64
S10	224.32	215.49 214.92	214.80	DRAIN MANHOLE (D-751-5.1A)	156667.05	1046091.01
S11A	219.41	211.80		EX CATCH BASIN (TO REMAIN)	156619.49	1046221.74
S11B	223.91			DRAIN MANHOLE (D-751-5.1A)	156619.49	1046221.74
S12A	223.52	211.47		EX DRAIN MANHOLE (TO REMAIN)	156706.78	1046397.74
S12B	224.34			STRUCTURE ADJUSTMENT (D-751-5.4)	156706.78	1046397.74
S13	222.02	211.77	211.72	CATCH BASIN (D-751-5.2A)	156942.78	1046311.40
S14	222.95		212.42	STRUCTURE ADJUSTMENT (D-751-5.4)	157363.01	1046109.25
S15	222.80		216.35	CATCH BASIN (D-751-5.2B)	156682.39	1045839.47
S16	225.96	215.94		REPLACE FRAME/COVER (D-751-5.5)	156708.04	1045916.60
S17	220.38		215.51	CATCH BASIN (D-751-5.2B)	156609.45	1045495.34
S18	220.31		215.55	CATCH BASIN (D-751-5.2B)	156693.13	1045457.36
S19	220.31	214.95 214.95		STRUCTURE ADJUSTMENT (D-751-5.4)	156634.68	1045445.85
S20	221.49		217.15	CATCH BASIN (D-751-5.2B)	156932.93	1045353.99
S21	221.38	216.53		EX CATCH BASIN (TO REMAIN)	156936.17	1045292.29
S22A	221.46		218.10	CATCH BASIN (D-751-5.2B)	157054.15	1045333.15
S22B	221.32		217.97	CATCH BASIN (D-751-5.2B)	157131.65	1045256.85
S23	220.98	217.53 217.53		EX CATCH BASIN (TO REMAIN)	157051.57	1045218.53
S24	221.26			CATCH BASIN (D-751-5.2B)	157093.61	1045138.88
S25	221.43			STRUCTURE ADJUSTMENT (D-751.5.4)	157123.92	1045081.48
S26	220.92		215.91	CATCH BASIN (D-751-5.2B)	157464.22	1044352.30
S27	221.64	214.70		STRUCTURE ADJUSTMENT (D-751-5.4)	157378.82	1044267.02
S28	219.71			CATCH BASIN (D-751-5.2B)	157289.74	1044186.74
S29	219.77		216.21	DIVERSION WEIR (D-751-5.6)	157295.09	1044420.46

PIPE TABLE

NAME	SIZE	LENGTH	SLOPE	DESCRIPTION	FROM STRC	TO STRC
PIPE 1	15"	185'	0.50%	15" RCP (D-701-5.1B)	S1	S2
PIPE 2	15"	199'	0.50%	15" RCP (D-701-5.1B)	S2	S3
PIPE 3	15"	116'	0.50%	15" RCP (D-701-5.1B)	S3	S4
PIPE 4	15"	118'	0.50%	15" RCP (D-701-5.1B)	S4	S5
PIPE 5	18"	116'	0.50%	18" RCP (D-701-5.1C)	S5	S6
PIPE 6	18"	116'	0.70%	18" RCP (D-701-5.1C)	S6	S7
PIPE 7	18"	57'	1.10%	18" RCP (D-701-5.1C)	S7	S8
PIPE 8i	18"	51'	1.50%	18" RCP (D-701-5.1C)	S8	S10
PIPE 8ii	18"	18'	1.50%	18" RCP (D-701-5.1C)	S8	S9
PIPE 9	18"	14'	1.10%	18" RCP (D-701-5.1C)	S9	S10
PIPE 10	18"	139'	2.16%	18" RCP (D-701-5.1C)	S10	S11A
PIPE 13	48"	251'	0.10%	48" RCP (D-701-5.1D)	S13	S12A
PIPE 14	48"	466'	0.14%	48" RCP (D-701-5.1D)	S14	S13
PIPE 15	15"	81'	0.50%	15" RCP (D-701-5.1B)	S15	S16
PIPE 17	15"	56'	1.00%	15" RCP (D-701-5.1B)	S17	S19
PIPE 18	15"	60'	1.00%	15" RCP (D-701-5.1B)	S18	S19
PIPE 20	15"	62'	1.00%	15" RCP (D-701-5.1B)	S20	S21
PIPE 22A	15"	115'	0.50%	15" RCP (D-701-5.1B)	S22A	S23
PIPE 22B	15"	89'	0.50%	15" RCP (D-701-5.1B)	S22B	S23
PIPE 26	15"	121'	1.00%	15" RCP (D-701-5.1B)	S26	S27
PIPE 29	18"	21'	1.00%	18" RCP (D-701-5.1C)	S29	
PIPE 30	12"	29'	5.52%	12" HDPE (D-701-5.1E)		
TD 1	12"	12'	1.00%	12" RCP (D-701-5.1A)		S3
TD 2	12"	12'	1.00%	12" RCP (D-701-5.1A)		S4
TD 3	12"	12'	1.00%	12" RCP (D-701-5.1A)		S5
TD 4	12"	12'	1.00%	12" RCP (D-701-5.1A)		S6
TD 5	12"	12'	1.00%	12" RCP (D-701-5.1A)		S7



LEGEND:

- 226 — MAJOR CONTOUR
- 226.5 — MINOR CONTOUR
- LIMIT OF DISTURBANCE
- ECB — EROSION CONTROL SEDIMENT BARRIER
- DRAIN PIPE
- INLET PROTECTION FILTER BAG
- CATCH BASIN
- (D) MANHOLE
- ADJUST RIM ELEVATION

NOTES:

1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE LAYOUT PLANS ON SHEETS GE-01 TO GE-04B
3. SEE DRAINAGE DETAILS ON SHEETS GR-06 TO GR-10.
4. SEE EROSION CONTROL DETAILS ON SHEET EC-01
5. STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED IN A LOCATION AS DIRECTED BY THE RESIDENT PROJECT REPRESENTATIVE AND SHALL BE PAID UNDER ITEM C-102-5.3.
6. PLACE TOPSOIL, SEED, AND MULCH IN ALL DISTURBED TURF AREAS TO BE PAID UNDER ITEMS T-901-5.1, T-905-5.1 & T-908-5.1.
7. PLACE INLET PROTECTION FILTER BAGS IN EXISTING CATCH BASINS SCHEDULED FOR REMOVAL PRIOR TO DEMOLITION WORK AS DIRECTED BY RPR (C-102-5.1).
8. S1: INSTALL NEW SNOWMELTER (ITEM M-300-1).
9. S2: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE (ITEM D-751-5.1A).
10. S3: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE FOR TRENCH DRAIN OUTLET (ITEM D-751-5.1A).
11. S12: ADJUST STRUCTURE RIM ELEVATION (ITEM D-751-5.4). CONNECT NEW 48" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1D.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
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CHECKED BY: BMB
DRAWN BY: BRF
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GRADING, DRAINAGE, AND EROSION
CONTROL PLAN - BASE BID

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-01

SHEET 43 OF 90 REV

PROVIDE 1 ½" DROP OFF EDGE OF PAVEMENT

MATCH INTO EXISTING GRADE

INSTALL NEW DRAINAGE STRUCTURE (TYP) SEE STRUCTURE TABLE ON SHEET GR-01

INSTALL NEW DRAIN PIPE (TYP) SEE PIPE TABLE ON SHEET GR-01

SEE NOTE 10

PIPE 14: 466 LF OF 48" REINFORCED CONCRETE PIPE @ 0.14%

PIPE 13: 251 LF OF 48" REINFORCED CONCRETE PIPE @ 0.10%

SEE NOTE 9

LIMIT OF DISTURBANCE (TYP)

PROPOSED CONTOURS (TYP)

SEE NOTE 8

SEE NOTE 7

SEE NOTE 6

SEE NOTE 5

PIPE 6: 116 LF OF 18" REINFORCED CONCRETE PIPE @ 0.70%

PIPE 5: 116 LF OF 18" REINFORCED CONCRETE PIPE @ 0.50%

SEE NOTE 4

PIPE 4: 118 LF OF 15" REINFORCED CONCRETE PIPE @ 0.50%

PIPE 9

PIPE 8i

PIPE 8ii

PIPE 10: 139 LF OF 18" REINFORCED CONCRETE PIPE @ 2.16%

PLACE INLET PROTECTION FILTER BAG (TYP) (ITEM C-102-5.1)

INSTALL EROSION CONTROL SEDIMENT BARRIER (TYP) (ITEM C-102-5.2)

INSTALL NEW OIL / WATER SEPARATOR SEE DETAIL ON SHEET GR-08

PIPE 7: 57 LF OF 18" REINFORCED CONCRETE PIPE @ 1.10%

SEE NOTE 12

INSTALL NEW TRENCH DRAIN SEE LAYOUT ON SHEET GE-05 SEE DETAIL ON SHEET GR-07 (ITEM D-751-5.3)

NEW CARGO APRON (BY OTHERS)

MATCH INTO CONCRETE APRON GRADE

NEW CARGO BUILDING (BY OTHERS)

CARGO SITE CONTOURS (TYP) (BY OTHERS)

PIPE 15: 81 LF OF 15" REINFORCED CONCRETE PIPE @ 0.50%

SEE NOTE 11

MATCH LINE (SEE SHEET GR-01)

MATCH LINE (SEE SHEET GR-03A)

TW 'A'

TW 'C'

TW 'D'

SERVICE ROAD

226 MAJOR CONTOUR

226.5 MINOR CONTOUR

LIMIT OF DISTURBANCE

ECB EROSION CONTROL SEDIMENT BARRIER

DRAIN PIPE

INLET PROTECTION FILTER BAG

CATCH BASIN

MANHOLE

ADJUST RIM ELEVATION

NOTES:

1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET GR-01 FOR GRADING, DRAINAGE & EROSION CONTROL NOTES.
3. SEE SHEET GR-01 FOR PIPE AND STRUCTURE TABLE.
4. S3 - S7: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE FOR TRENCH DRAIN OUTLET (ITEM D-751-5.1A).
5. S8: INSTALL NEW DRAINAGE DIVERSION MANHOLE (ITEM D-751-5.1B).
6. S9: INSTALL NEW OIL / WATER SEPARATOR (ITEM M-900-1).
7. S10: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE (ITEM D-751-5.1A)
8. S11A: CONNECT NEW 15" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1B.
9. S12A: CONNECT NEW 48" RCP DRAIN LINE TO EXISTING DRAIN MANHOLE. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1D.
10. S13: INSTALL NEW AIRCRAFT RATED CATCH BASIN (ITEM D-751-5.2A).
11. S15: INSTALL NEW AIRCRAFT RATED CATCH BASIN (ITEM D-751-5.2A).
12. S16: REPLACE EXISTING CATCH BASIN FRAME & COVER WITH DRAIN MANHOLE FRAME & COVER AND ADJUST STRUCTURE RIM ELEVATION (ITEM D-751-5.5).

0 40 80 120 FT

SCALE

ENGINEER'S SEAL

THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GRADING, DRAINAGE, AND EROSION CONTROL PLAN - BASE BID

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

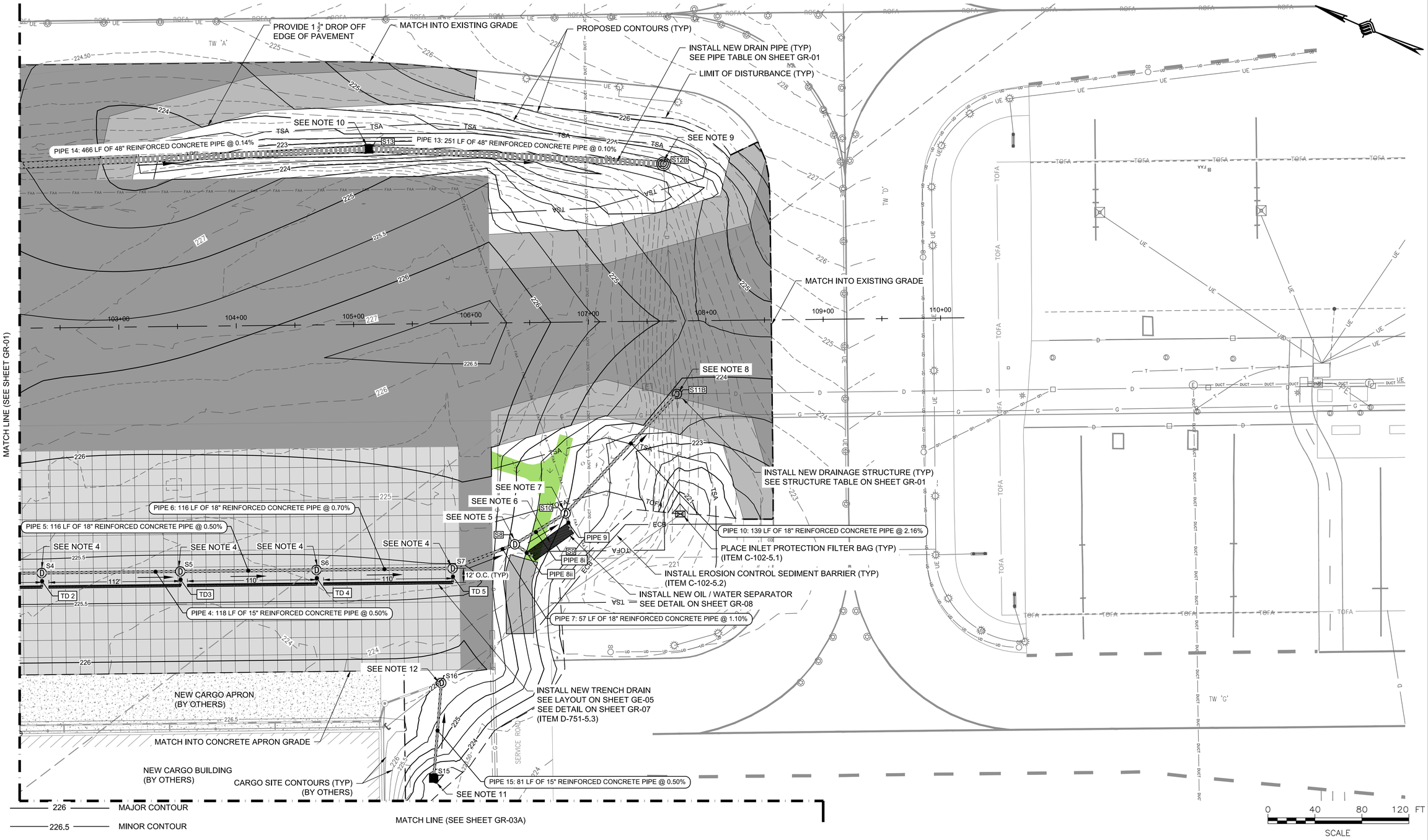
FILE NAME:

AIP No.: 3-33-0011-XXX-2021

DRAWING NO.

GR-02

SHEET 44 OF 90 REV



226 MAJOR CONTOUR
226.5 MINOR CONTOUR
LIMIT OF DISTURBANCE
ECB EROSION CONTROL SEDIMENT BARRIER
DRAIN PIPE
INLET PROTECTION FILTER BAG
CATCH BASIN
MANHOLE
ADJUST RIM ELEVATION

NOTES:
1. THIS SHEET SHALL REPLACE SHEET GR-02 IF ADD ALTERNATE 4 IS AWARDED.
2. SEE SHEET GR-01 FOR GRADING, DRAINAGE & EROSION CONTROL NOTES.
3. SEE SHEET GR-01 FOR PIPE AND STRUCTURE TABLE.
4. S3 - S7: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE FOR TRENCH DRAIN OUTLET (ITEM D-751-5.1A).
5. S8: INSTALL NEW DRAINAGE DIVERSION MANHOLE (ITEM D-751-5.1B).
6. S9: INSTALL NEW OIL / WATER SEPARATOR (ITEM M-900-1).
7. S10: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE (ITEM D-751-5.1A)
8. S11B: INSTALL NEW AIRCRAFT RATED DRAIN MANHOLE. CONNECT NEW AND EXISTING PIPES TO NEW DRAIN MANHOLE. CONNECTIONS INCIDENTAL TO STRUCTURE INSTALLATION ITEM D-751-5.1A.
9. S12B: ADJUST STRUCTURE RIM ELEVATION (D-751-5.4). CONNECT NEW 48" RCP DRAIN LINE TO EXISTING DRAIN MANHOLE. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1D.
10. S13: INSTALL NEW AIRCRAFT RATED CATCH BASIN (ITEM D-751-5.2A).
11. S15: INSTALL NEW AIRCRAFT RATED CATCH BASIN (ITEM D-751-5.2A).
12. S16: REPLACE EXISTING CATCH BASIN FRAME & COVER WITH DRAIN MANHOLE FRAME & COVER AND ADJUST STRUCTURE RIM ELEVATION (ITEM D-751-5.5).
13. ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE TAXIWAY D TAXILANE CONNECTOR SHALL BE PAID FOR AS PART OF ADD ALTERNATE 4. ALL OTHER WORK SHOWN SHALL BE PAID FOR AS PART OF THE BASE BID.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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DESIGNED BY: DPB | DRAWN BY: BRF | CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GRADING, DRAINAGE, AND EROSION CONTROL PLAN – ADD ALT 4

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-02A

SHEET 45 OF 90 REV

MATCH LINE (SEE SHEET GR-01)

MATCH LINE (SEE SHEET GR-02)

NEW CARGO BUILDING
(BY OTHERS)

CARGO SITE CONTOURS (TYP)
(BY OTHERS)

PIPE 30: 29 LF OF 12" HDPE @ 5.52%

LIMIT OF DISTURBANCE (TYP)

SEE NOTE 9

SEE NOTE 7

SEE NOTE 5

SEE NOTE 4

COORDINATE TIE IN WITH CARGO
BUILDING CONTRACTOR

INSTALL NEW DRAIN STRUCTURE (TYP)
SEE STRUCTURE TABLE ON SHEET GR-01

MATCH INTO EXISTING PAVING JOINT

PROTECT EXISTING
ISLAND AND BOLLARDS

PIPE 17: 56 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%

INSTALL NEW DRAIN PIPE (TYP)
SEE PIPE TABLE ON SHEET GR-01

INSTALL INLET PROTECTION FILTER BAG (TYP)
SEE DETAIL ON SHEET EC-01
(ITEM C-102-5.1)

PROTECT EXISTING BOLLARDS

MATCH EXISTING GRADES
IN ADD ALT 3 MILL AREA

PIPE 20: 62 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%

PIPE 18: 60 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%

SEE NOTE 8

SEE NOTE 6

PIPE 22A: 115 LF OF 15" REINFORCED CONCRETE PIPE @ 0.50%

SEE NOTE 10

BASE BID ALTERNATE 1

S17 S18 S19 S20 S21 S22A S23

211+00 210+00 209+00 208+00 207+00 206+00 205+00 204+00 203+00 202+00 201+00 200+00

TERMINAL BUILDING

PARKING GARAGE

LEGEND:

226	MAJOR CONTOUR
226.5	MINOR CONTOUR
	LIMIT OF DISTURBANCE
ECB	EROSION CONTROL SEDIMENT BARRIER
	DRAIN PIPE
	INLET PROTECTION FILTER BAG
	CATCH BASIN
D	MANHOLE
	ADJUST RIM ELEVATION

NOTES:

1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 1 IS AWARDED.
2. SEE SHEET GR-01 FOR GRADING, DRAINAGE & EROSION CONTROL NOTES.
3. SEE SHEET GR-01 FOR PIPE AND STRUCTURE TABLE.
4. S17: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
5. S18: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
6. S19: ADJUST STRUCTURE RIM ELEVATION (D-751-5.4). CONNECT NEW 15" RCP DRAIN LINES TO EXISTING CATCH BASIN. CONNECTIONS INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1B.
7. S20: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
8. S21: CONNECT NEW 15" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1B.
9. S22A: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
10. S23: CONNECT NEW 15" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO ITEM D-701-5.1B.
11. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BEMBEN
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: BRF
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GRADING, DRAINAGE, AND EROSION
CONTROL PLAN – ALT 1 & ADD ALT 3

SCALE: 1" = 40'
DATE: MARCH 2022

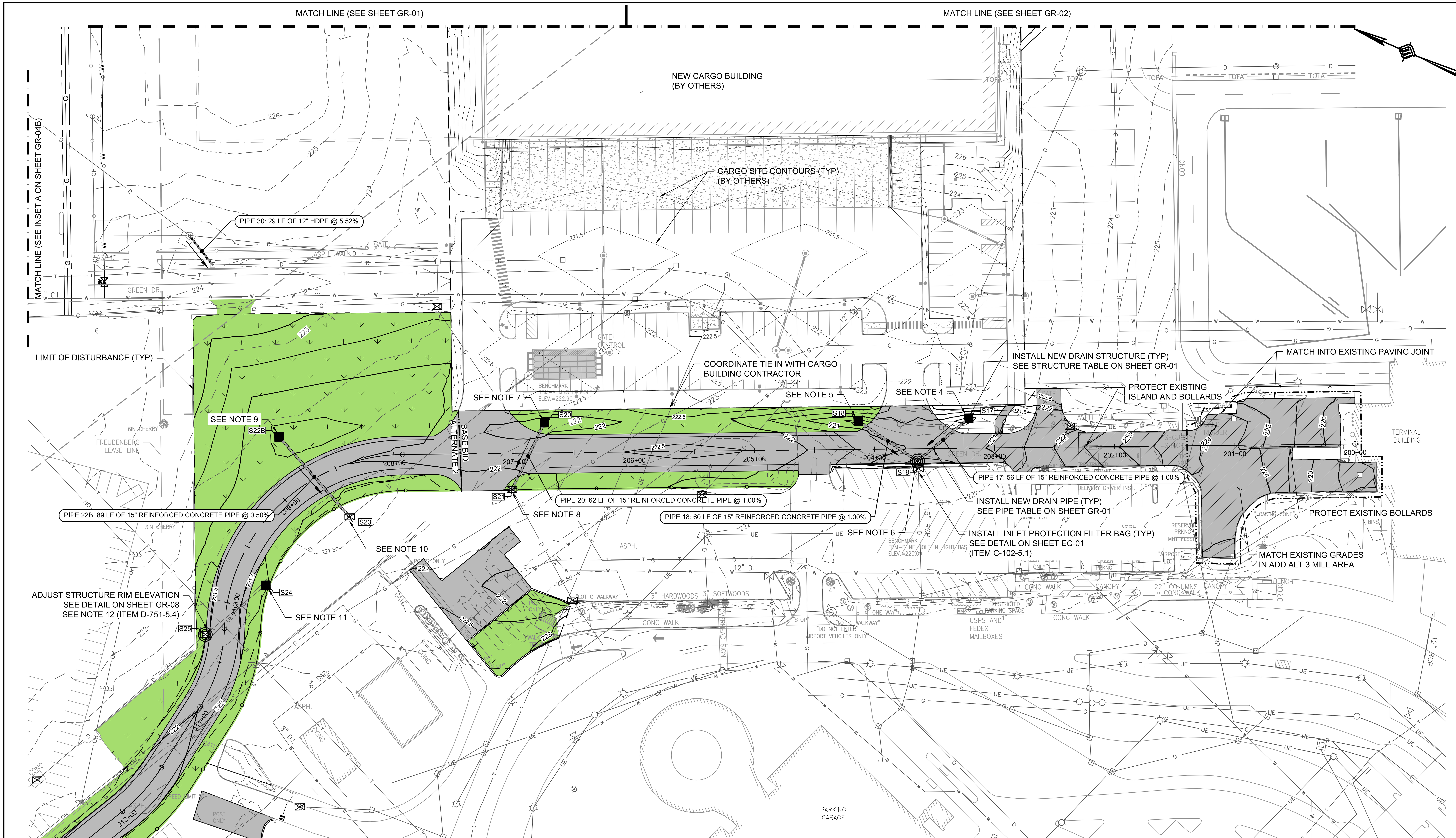
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-03A

SHEET 46 OF 90
REV



MATCH LINE (SEE SHEET GR-01)
MATCH LINE (SEE SHEET GR-02)
MATCH LINE (SEE INSET A ON SHEET GR-04B)
MATCH LINE (SEE SHEET GR-04B)
NEW CARGO BUILDING
(BY OTHERS)
CARGO SITE CONTOURS (TYP)
(BY OTHERS)
PIPE 30: 29 LF OF 12" HDPE @ 5.52%
LIMIT OF DISTURBANCE (TYP)
SEE NOTE 9
SEE NOTE 7
SEE NOTE 5
SEE NOTE 4
COORDINATE TIE IN WITH CARGO
BUILDING CONTRACTOR
INSTALL NEW DRAIN STRUCTURE (TYP)
SEE STRUCTURE TABLE ON SHEET GR-01
MATCH INTO EXISTING PAVING JOINT
PROTECT EXISTING
ISLAND AND BOLLARDS
BASE BID
ALTERNATE 2
PIPE 22B: 89 LF OF 15" REINFORCED CONCRETE PIPE @ 0.50%
PIPE 20: 62 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%
PIPE 18: 60 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%
PIPE 17: 56 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%
SEE NOTE 8
SEE NOTE 10
SEE NOTE 6
SEE NOTE 11
INSTALL NEW DRAIN PIPE (TYP)
SEE PIPE TABLE ON SHEET GR-01
INSTALL INLET PROTECTION FILTER BAG (TYP)
SEE DETAIL ON SHEET EC-01
(ITEM C-102-5.1)
PROTECT EXISTING BOLLARDS
MATCH EXISTING GRADES
IN ADD ALT 3 MILL AREA
ADJUST STRUCTURE RIM ELEVATION
SEE DETAIL ON SHEET GR-08
SEE NOTE 12 (ITEM D-751-5.4)
TERMINAL
BUILDING
PARKING
GARAGE
USPS AND
FEDEX
MAILBOXES
0 40 80 120 FT
SCALE

226	MAJOR CONTOUR
226.5	MINOR CONTOUR
— — —	LIMIT OF DISTURBANCE
ECB	EROSION CONTROL SEDIMENT BARRIER
	DRAIN PIPE
⊠	INLET PROTECTION FILTER BAG
■	CATCH BASIN
Ⓓ	MANHOLE
◎	ADJUST RIM ELEVATION

NOTES:

1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET GR-01 FOR GRADING, DRAINAGE & EROSION CONTROL NOTES.
3. SEE SHEET GR-01 FOR PIPE AND STRUCTURE TABLE.
4. S17: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
5. S18: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
6. S19: ADJUST STRUCTURE RIM ELEVATION (D-751-5.4). CONNECT NEW 15" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTIONS INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1B.
7. S20: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
8. S21: CONNECT NEW 15" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1B.
9. S22B: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
10. S23: CONNECT NEW 15" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO ITEM D-701-5.1B.
11. S24: INSTALL NEW H20 RATED CATCH BASIN. CONNECT EXISTING PIPES TO NEW CATCH BASIN. CONNECTIONS ARE INCIDENTAL TO CATCH BASIN INSTALLATION ITEM D-751-5.2B.
12. S25: ADJUST STRUCTURE RIM ELEVATION (ITEM D-751-5.4).
13. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.

ENGINEER'S SEAL

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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GRADING, DRAINAGE, AND EROSION CONTROL PLAN - ALT 2 & ADD ALT 3

DATE: MARCH 2022

SCALE: 1" = 40'

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-03B

REV

MATCH LINE (SEE SHEET GR-03B)

INSTALL INLET PROTECTION FILTER BAG (TYP)
SEE DETAIL ON SHEET EC-01
(ITEM C-102-5.1)

SEE NOTE 4

SEE NOTE 7

PIPE 29: 21 LF OF 18" REINFORCED CONCRETE PIPE @ 1.00%

PIPE 26: 121 LF OF 15" REINFORCED CONCRETE PIPE @ 1.00%

INSTALL NEW DRAIN PIPE
SEE PIPE TABLE ON SHEET GR-01

SEE NOTE 5

LIMIT OF DISTURBANCE (TYP)

INSTALL STORMWATER TREATMENT PRACTICE
SEE DETAIL ON SHEET GR-09 & GR-10
(ITEM M-750-1)

ADJUST STRUCTURE RIM ELEVATION (TYP)
SEE DETAIL ON SHEET GR-08
(ITEM D-751-5.4)

INSTALL NEW DRAINAGE STRUCTURE (TYP)
SEE STRUCTURE TABLE ON SHEET GR-01

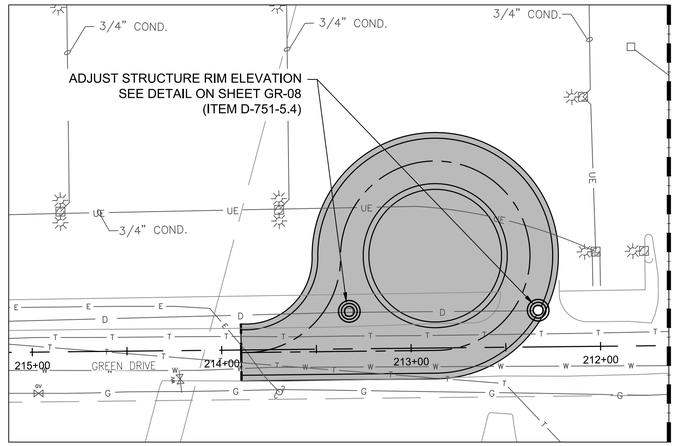
SEE NOTE 6

AMMON DR.

FREUDENBERG LEASE LINE

LOT C

MANCHESTER
LONDONDERRY



INSET A
SCALE: 1" = 40'

0 40 80 120 FT
SCALE

LEGEND:

226	MAJOR CONTOUR
226.5	MINOR CONTOUR
	LIMIT OF DISTURBANCE
ECB	EROSION CONTROL SEDIMENT BARRIER
	DRAIN PIPE
	INLET PROTECTION FILTER BAG
	CATCH BASIN
D	MANHOLE
	ADJUST RIM ELEVATION

NOTES:
1. THE UNDERGROUND CHAMBER STORAGE SYSTEM USED FOR STORMWATER TREATMENT SHALL BE INSTALLED AS PART OF THE BASE BID. ALL OTHER WORK SHOWN ON THIS SHEET WILL ONLY OCCUR IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET GR-01 FOR GRADING, DRAINAGE & EROSION CONTROL NOTES.
3. SEE SHEET GR-01 FOR PIPE AND STRUCTURE TABLE.
4. S26: INSTALL NEW H20 RATED CATCH BASIN (ITEM D-751-5.2B).
5. S27: ADJUST STRUCTURE RIM ELEVATION (ITEM D-751-5.4). CONNECT NEW 15" RCP DRAIN LINE TO EXISTING DRAIN MANHOLE. CONNECTION INCIDENTAL TO PIPE INSTALLATION ITEM D-701-5.1B.
6. S28: INSTALL NEW H20 RATED CATCH BASIN. CONNECT EXISTING PIPES TO NEW CATCH BASIN. CONNECTIONS INCIDENTAL TO CATCH BASIN INSTALLATION ITEM D-751-5.2B.
7. S29: INSTALL DIVERSION WEIR IN EXISTING CATCH BASIN (ITEM D-751-5.6). CONNECT NEW 18" RCP DRAIN LINE TO EXISTING CATCH BASIN. CONNECTION INCIDENTAL TO PIPE INSTALL ATION ITEM D-701-5.1C)
8. INSTALL NEW UNDERGROUND CHAMBER STORAGE SYSTEM (STORMTECH SC-740 OR APPROVED EQUAL) SIZED TO STORE AND INFILTRATE A MINIMUM OF 6,900 CUBIC FEET OF STORMWATER. SEE DETAIL ON SHEET GR-09 & GR-10. CHAMBER SYSTEM INSTALLATION TO BE PAID UNDER ITEM M-750-1.

ENGINEER'S SEAL
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LICENSED PROFESSIONAL ENGINEER

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DESIGNED BY: DPB | DRAWN BY: BRF | CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

GRADING, DRAINAGE, AND EROSION CONTROL PLAN – ALT 2

SCALE: 1" = 40' | DATE: MARCH 2022

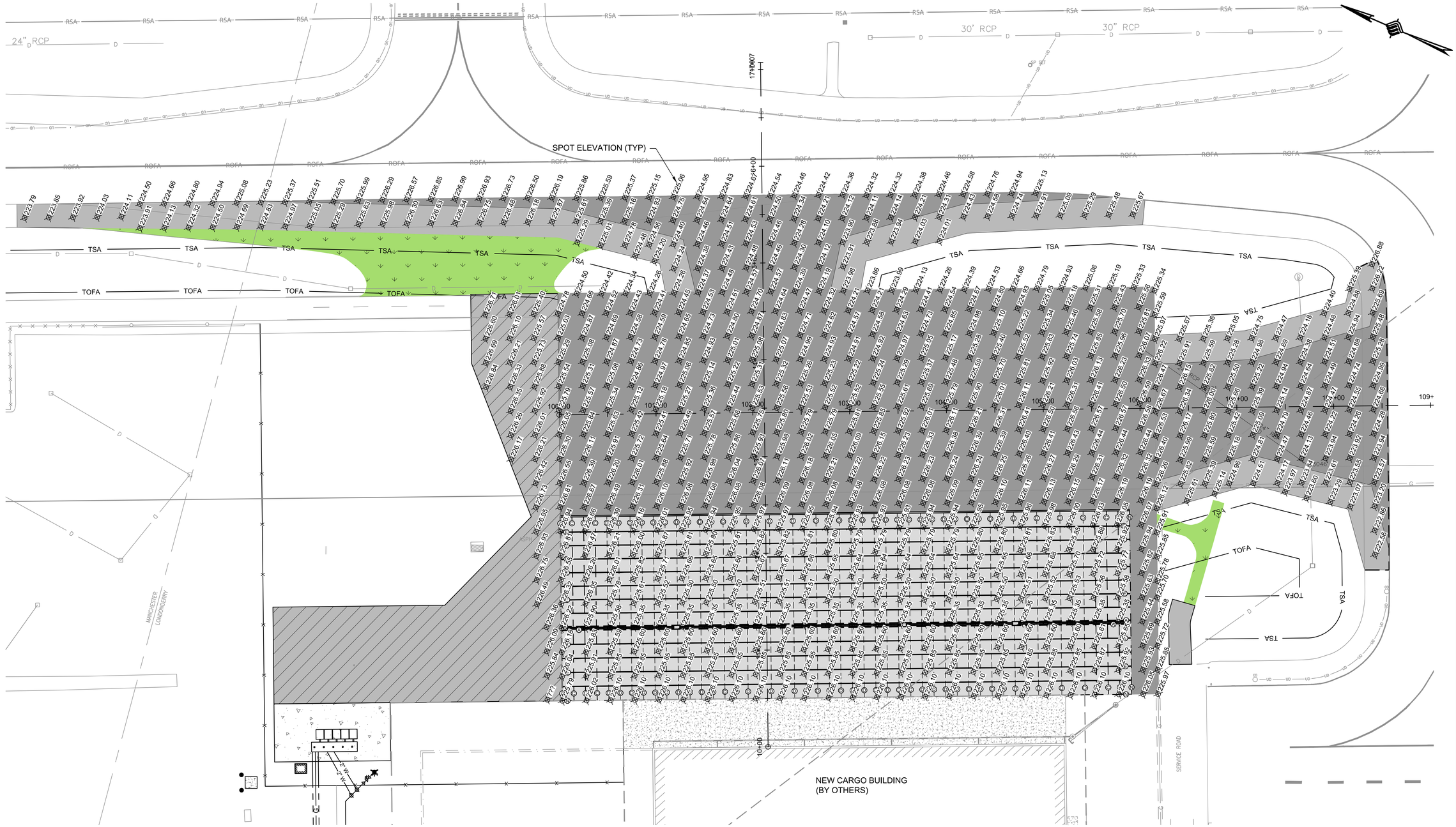
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-04B

SHEET 48 OF 90
REV



LEGEND:

- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON
- OVERLAY PAVEMENT
- GRASSED AREA
- 255.80 SPOT ELEVATION

NOTES:
1. FOR GRADING, DRAINAGE, AND EROSION CONTROL PLANS, SEE SHEETS GR-01 TO GR-04B.

ENGINEER'S SEAL
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DESIGNED BY: DPB
DRAWN BY: BRF
CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

SPOT GRADE

SCALE: 1" = 50'
DATE: MARCH 2022

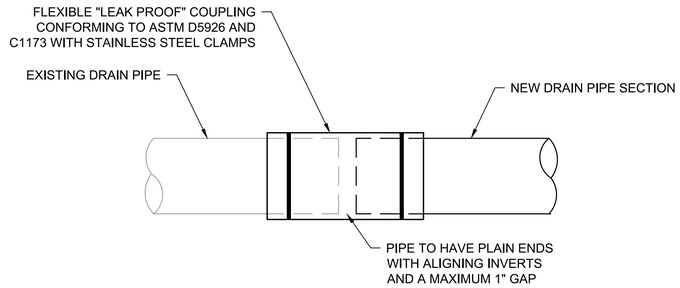
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

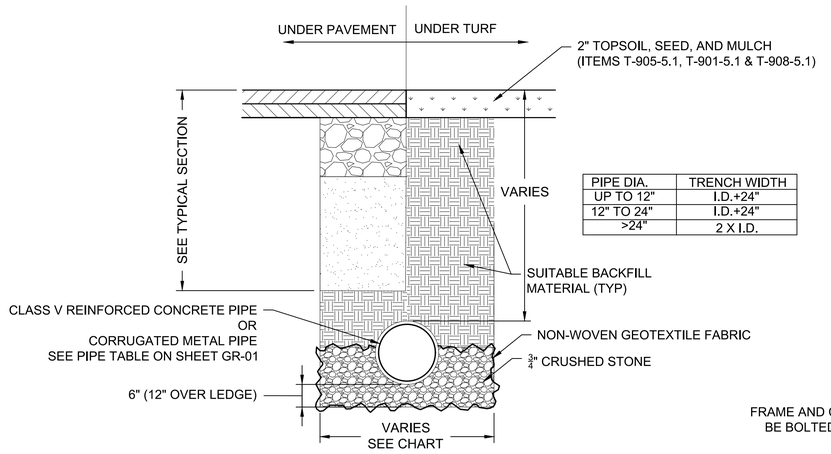
DRAWING NO.
GR-05

SHEET 49 OF 90
REV



CONNECT EXISTING PIPE TO NEW STRUCTURE DETAIL

NOT TO SCALE
(INCID. TO ITEMS D-751-5.1A, D-751-5.2B)



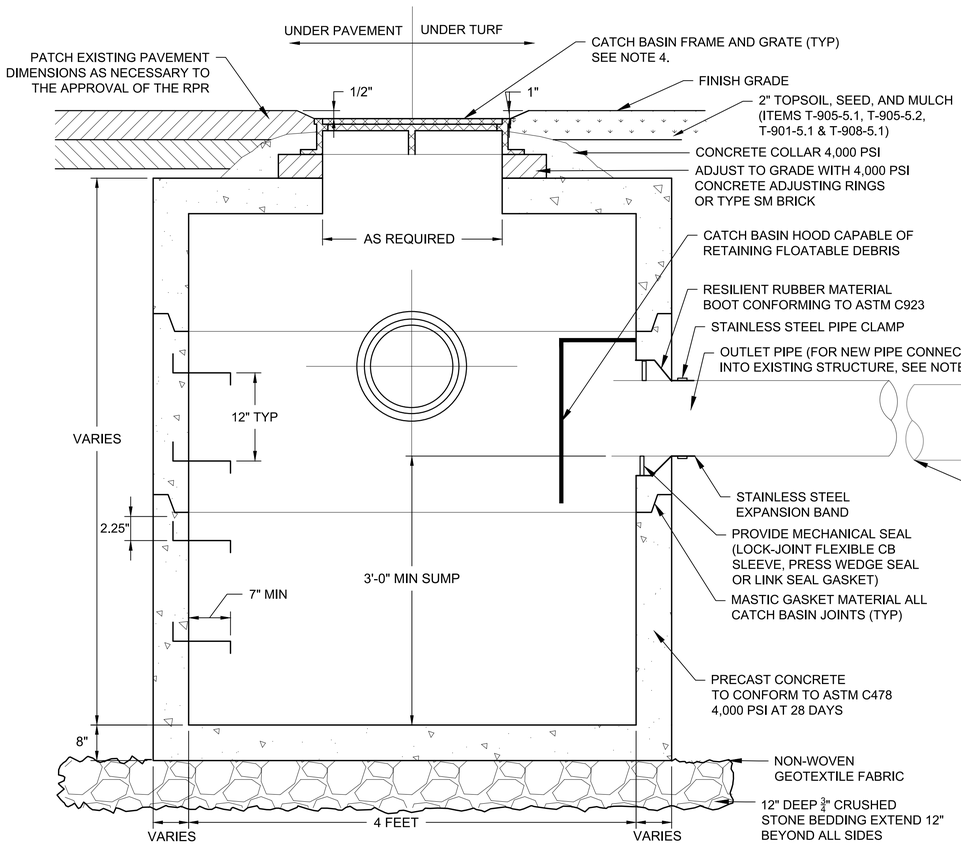
PIPE DIA.	TRENCH WIDTH
UP TO 12"	I.D.+24"
12" TO 24"	I.D.+24"
>24"	2 X I.D.

DRAIN PIPE TRENCH DETAIL

NOT TO SCALE
(ITEMS D-701-5.1A, D-701-5.1B, D-701-5.1C, D-701-5.1D & D-701-5.1E)

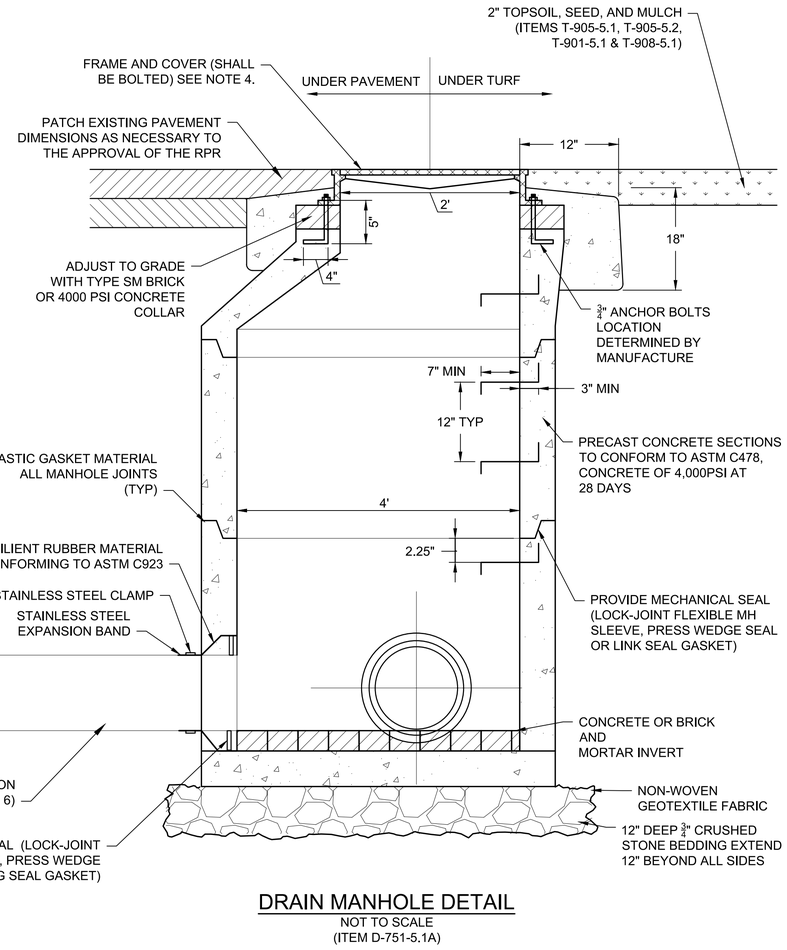
DRAIN PIPE NOTES:

1. CONTRACTOR SHALL SHORE TRENCH SIDES AS REQUIRED.
2. CONTRACTOR SHALL DEWATER TRENCH EXCAVATION AS REQUIRED.
3. CONTRACTOR SHALL COMPACT THE EXCAVATED SUBGRADE TO 95% OF ASTM D-1557 UNDER TURF AND 100% OF ASTM D-1557 UNDER PAVEMENT AND WITHIN 10' OF ALL EDGES OF PAVEMENT EVEN IN TURF.



CATCH BASIN DETAIL

NOT TO SCALE
(ITEMS D-751-5.2A & D-751-5.2B)



DRAIN MANHOLE DETAIL

NOT TO SCALE
(ITEM D-751-5.1A)

DRAINAGE STRUCTURE NOTES:

1. AIRCRAFT RATED PREFABRICATED REINFORCED CONCRETE STRUCTURES AND FRAME AND GRATES SHALL BE DESIGNED AND CONSTRUCTED TO SUPPORT A MINIMUM OF A 100,000 LB SINGLE WHEEL LOADING. ALL OTHER STRUCTURES SHALL BE H20 RATED. THE CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS AND MANUFACTURER CERTIFICATIONS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION. SHOP DRAWINGS FOR LOADING SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN NEW HAMPSHIRE.
2. THE WALL THICKNESS SHALL INCREASE IN SIZE TO CONFORM WITH THE REQUIREMENTS OF THE MANUFACTURER OF THE RESILIENT RUBBER BOOT AND BE SIZED ACCORDING TO THE DIAMETER OF THE STRUCTURE AND THE SIZE AND TYPE OF PIPE. THE WALL THICKNESS SHALL NOT BE LESS THAN 6" FOR STEEL COVER REQUIREMENTS AND SHALL BE DESIGNED TO MEET ALL REQUIREMENTS INCLUDING THE REQUIRED LOADING IN NOTE 1.
3. CONTRACTOR SHALL COMPACT THE EXCAVATED SUBGRADE TO 100% OF ASTM D-1557 WITHIN 10' OF ALL EDGES OF PAVEMENT EVEN IN TURF.
4. THE FRAME AND GRATE FOR ALL AIRFIELD STRUCTURES SHALL BE AIRPORT RATED. THE FRAME AND GRATE FOR ALL LANDSIDE STRUCTURES SHALL BE H20 RATED. ALL CATCH BASINS SHALL HAVE A MINIMUM OPENING AREA OF 4.8 SF, AND A WEIR PERIMETER OF 13.8 FT (NEENAH FOUNDRY R-3475 F OR APPROVED EQUAL).
5. ALL PREFAB-CONCRETE STRUCTURES SHALL HAVE COURSE, FINE, AND CONCRETE MATERIALS TESTED FOR ALKALI-SILICA REACTION (ASR) USING AASHTO T303 MODIFIED.
6. CORE INTO EXISTING STRUCTURE FOR PROPOSED PIPE CONNECTIONS INTO EXISTING STRUCTURES AND MORTAR AROUND PIPE CONNECTION. CONNECTIONS INTO EXISTING STRUCTURES ARE INCIDENTAL TO THE PIPE INSTALLATION ITEM.

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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DRAINAGE DETAILS (1 OF 5)

SCALE: NTS
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-06

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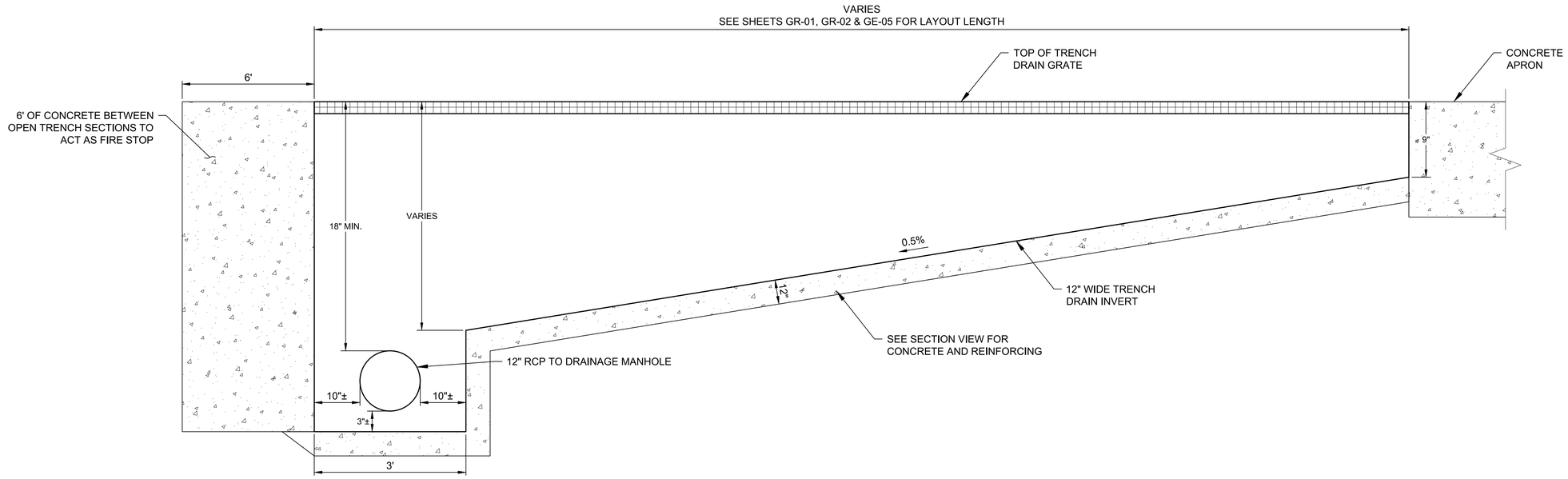
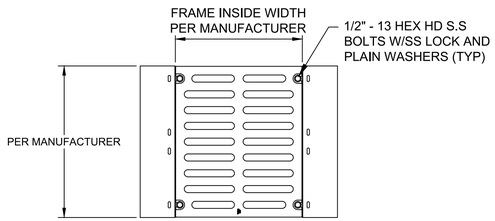
REV



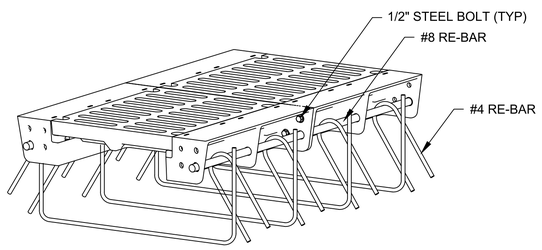
TRENCH DRAIN TYPICAL PROFILE

NOT TO SCALE
(ITEM D-751-5.3)



TRENCH DRAIN GRATE DETAIL

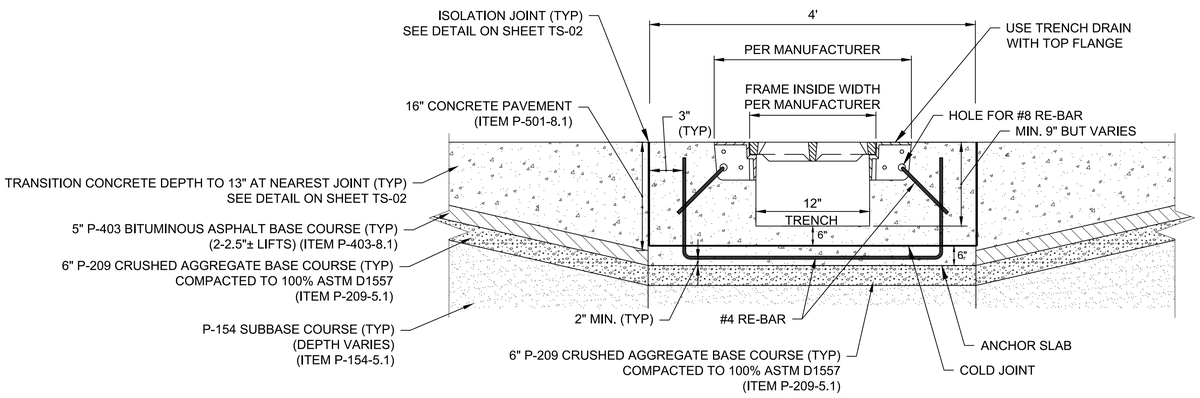
NOT TO SCALE
(ITEM D-751-5.3)



ISOMETRIC VIEW

NOTES:

1. CONCRETE AND BASE MATERIALS NOT SHOWN FOR CLARITY.



SECTION VIEW

NOTES:

1. TRENCH DRAIN SHALL HAVE A 0.5% SLOPE.
2. TRENCH DRAIN SHALL BE AIRPORT EXTRA HEAVY DUTY RATED.
3. PALLETIZE WITH WOOD BLOCKING SO GRATES ARE SUPPORTED AND STAY FLUSH AND PARALLEL WITH TOP SURFACES OF SIDE FRAMES. ENDS OF SIDE FRAMES MUST BE PARALLEL AND IN-LINE. GRATE MUST NOT EXTEND PAST ENDS OF SIDE FRAMES. GRATE MUST BE FLUSH OR BACK SLIGHTLY. CHECK BOTH ENDS OF ASSEMBLY WITH STRAIGHT EDGE.
4. BASIS OF DESIGN: EJ 6900Z4 6904M2 ASSEMBLY OR EQUIVALENT.

TRENCH DRAIN DETAIL

NOT TO SCALE
(ITEM D-751-5.3)

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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DRAINAGE DETAILS (2 OF 5)

SCALE: NTS
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-07

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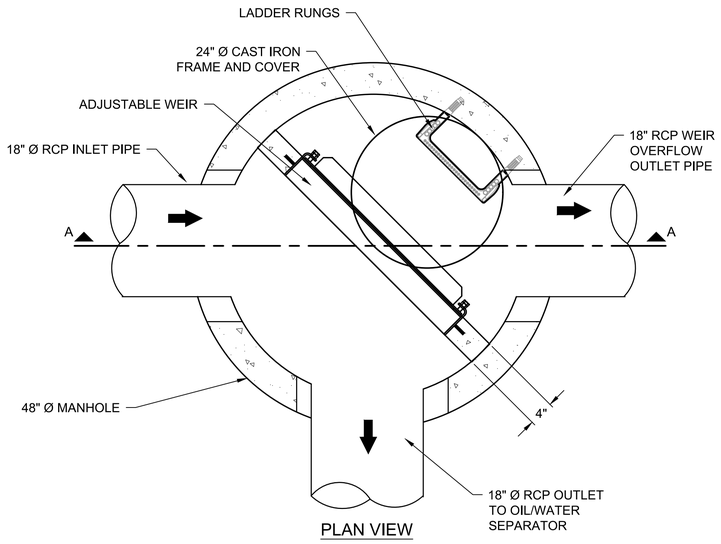
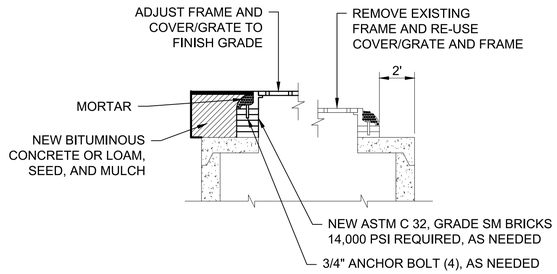
REV

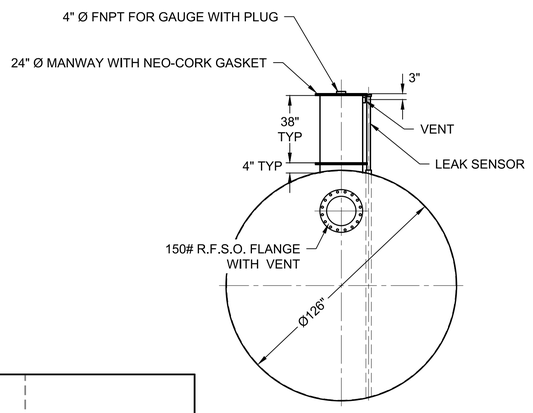


PLAN VIEW

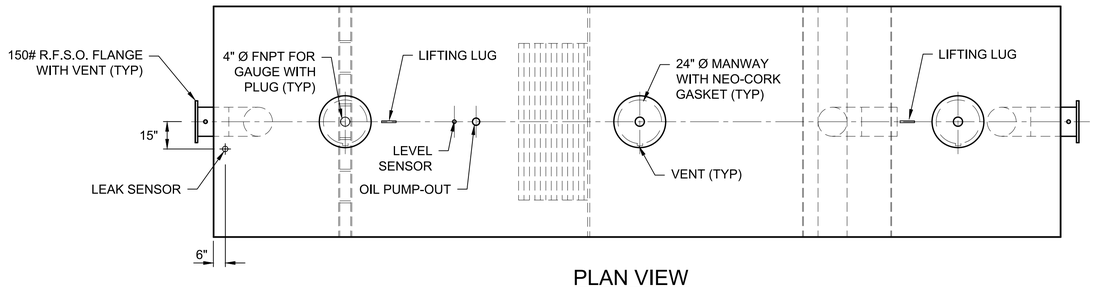


STRUCTURE ADJUSTMENT DETAIL

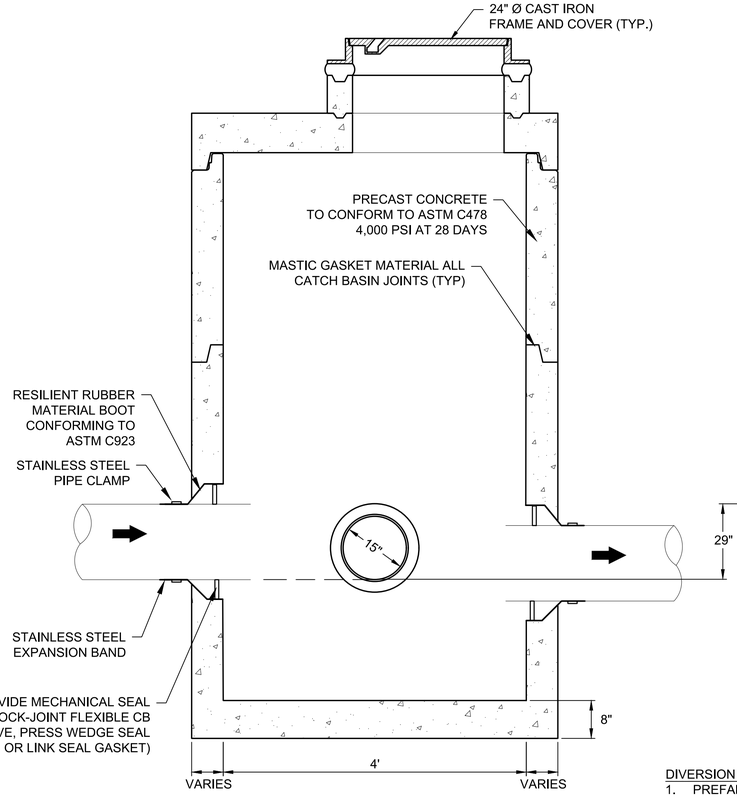
NOT TO SCALE
(ITEM D-751-5.4 OR L-115-5.3)



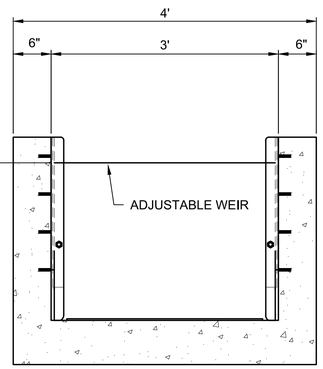
END VIEW



PLAN VIEW



SECTION A-A - ADJUSTABLE WEIR NOT SHOWN FOR CLARITY



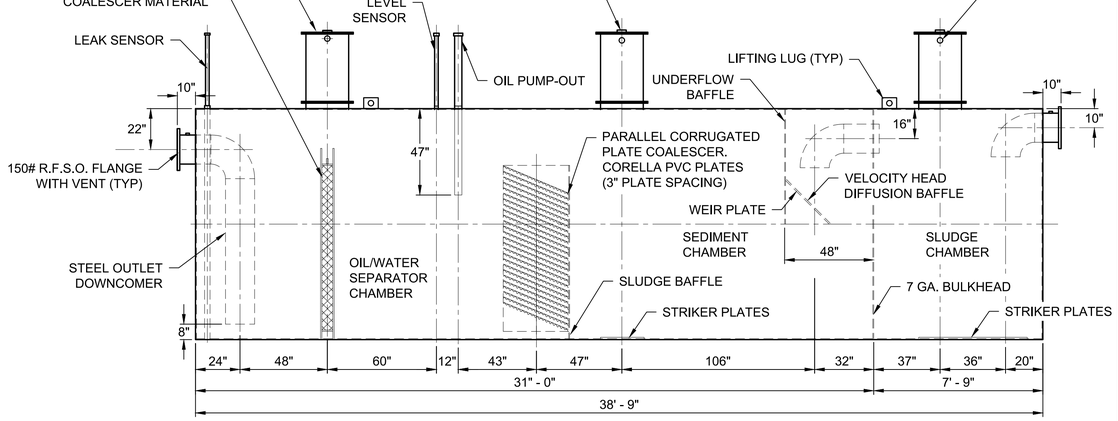
ADJUSTABLE WEIR - TYPICAL

DRAINAGE DIVERSION MANHOLE DETAIL

NOT TO SCALE
(ITEM D-751-5.1B)

DIVERSION DRAINAGE MANHOLE NOTES:

1. PREFABRICATED REINFORCED CONCRETE DIVERSION MANHOLE AND FRAME AND GRATE SHALL BE DESIGNED AND CONSTRUCTED TO SUPPORT A MINIMUM OF A 100,000 LB SINGLE WHEEL LOADING. THE CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS AND MANUFACTURER CERTIFICATIONS TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION. SHOP DRAWINGS FOR LOADING SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN NEW HAMPSHIRE.
2. THE WALL THICKNESS SHALL INCREASE IN SIZE TO CONFORM WITH THE REQUIREMENTS OF THE MANUFACTURER OF THE RESILIENT RUBBER BOOT AND BE SIZED ACCORDING TO THE DIAMETER OF THE STRUCTURE AND THE SIZE AND TYPE OF PIPE. THE WALL THICKNESS SHALL NOT BE LESS THAN 6" FOR STEEL COVER REQUIREMENTS AND SHALL BE DESIGNED TO MEET ALL REQUIREMENTS INCLUDING THE REQUIRED LOADING IN NOTE 1.
3. CONTRACTOR SHALL COMPACT THE EXCAVATED SUBGRADE TO 100% OF ASTM D-1557 WITHIN 10' OF ALL EDGES OF PAVEMENT EVEN IN TURF.
4. ALL PREFAB-CONCRETE STRUCTURES SHALL HAVE COURSE, FINE, AND CONCRETE MATERIALS TESTED FOR ALKALI-SILICA REACTION (ASR) USING AASHTO T303 MODIFIED.



SECTION VIEW

OIL / WATER SEPARATOR NOTES:

1. SEPARATOR SHALL BE 20,000 GALLON WITH A DESIGN FLOW RATE OF 2,000 GPM.
2. STRUCTURE SHALL BE HIGHLAND TANK HTC-G, HIGHGUARD, DW TYPE I 360, OR APPROVED EQUAL.
3. SEPARATOR SHALL BE PREFABRICATED AND SHALL BE INSTALLED UNDERGROUND BY CONTRACTOR WITH TOP ACCESS AT GROUND LEVEL.
4. SEPARATOR SHALL BE FURNISHED WITH OIL LEVEL ALARM AND LEAK DETECTION SYSTEM HAVING TOTAL VOLUME OF 2,000 GALLONS TO COMPLY WITH ANY SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) REQUIREMENTS.
5. MATERIAL SHALL BE DURABLE AND RESIST CORROSION.
6. ALL PARTS, NOT SPECIFICALLY MENTIONED HERIN, WHICH ARE NECESSARY IN ORDER TO FURNISH A COMPLETE UNIT, SHALL BE PROVIDED AND SHALL CONFORM TO THE BEST PRACTICES KNOW TO THE TRADE.
7. UNLESS OTHERWISE SPECIFIED, EQUIPMENT FURNISHED UNDER THIS SECTION SHALL BE FABRICATED AND INSTALLED IN COMPLIANCE WITH THE INSTRUCTIONS OF THE MANUFACTURER.
8. WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL FIRE PROTECTION, ENVIRONMENTAL, BUILDING, AND SAFETY CODES AND REGULATIONS.
9. ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR THE INSTALLATION OF A COMPLETE AND USABLE SYSTEM SHALL BE PAID FOR UNDER ITEM M-900-1.

OIL / WATER SEPARATOR DETAIL

NOT TO SCALE
(ITEM M-900-1)

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DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DRAINAGE DETAILS (3 OF 5)

SCALE: NTS
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-08

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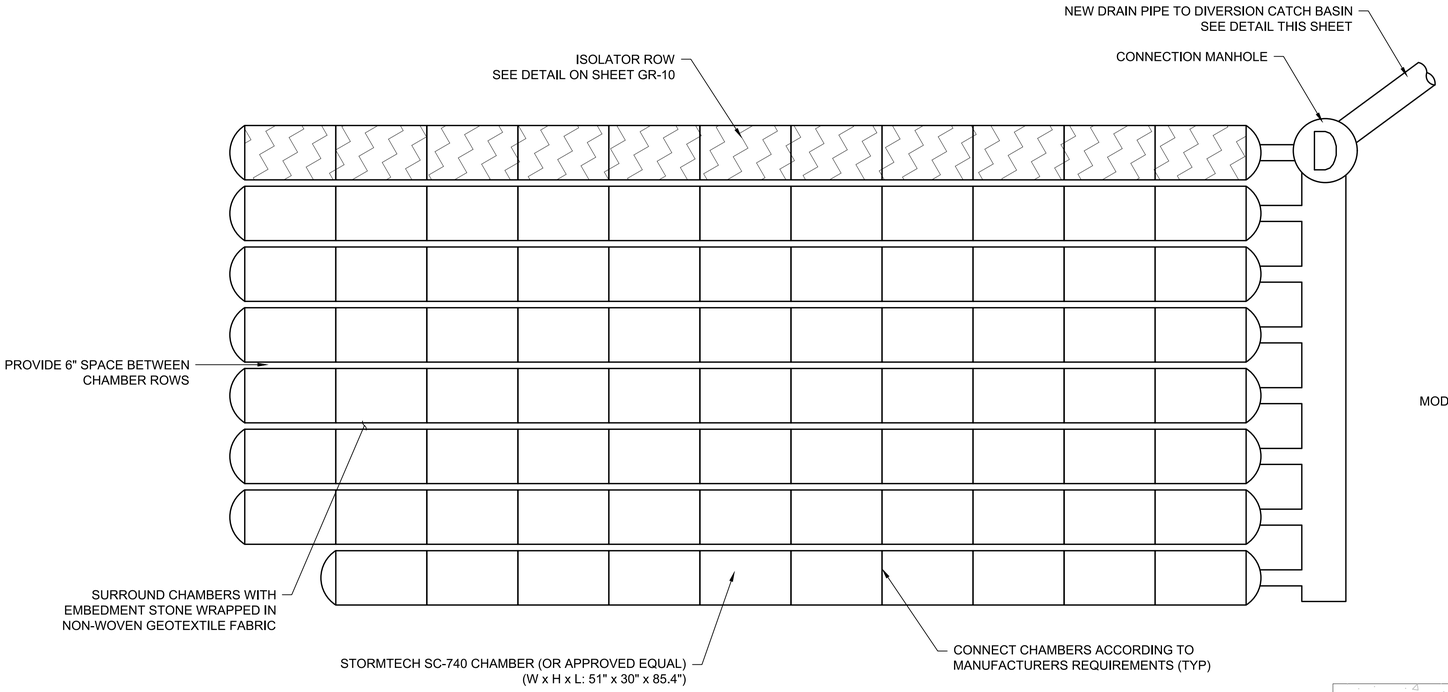
REV

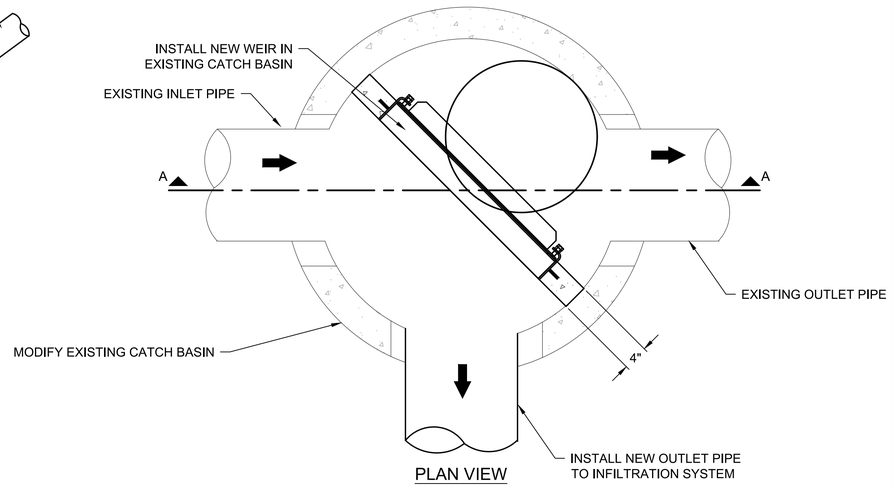


UNDERGROUND STORAGE CHAMBER SYSTEM

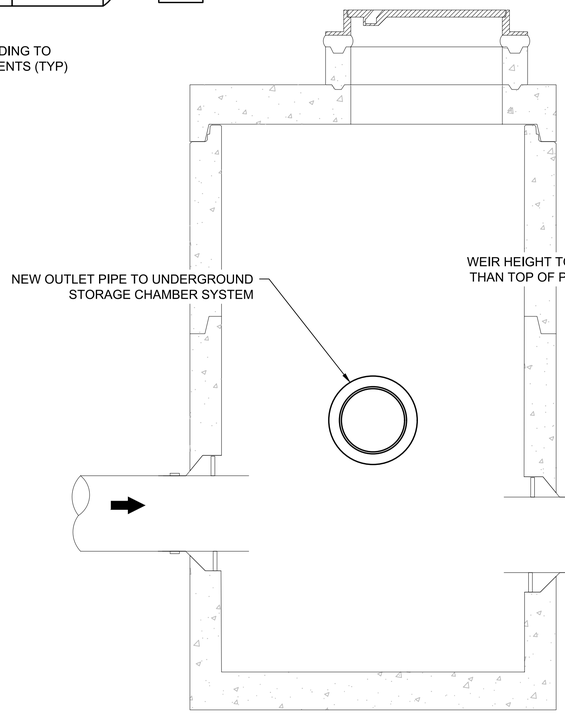
NOT TO SCALE
(ITEM M-750-1)

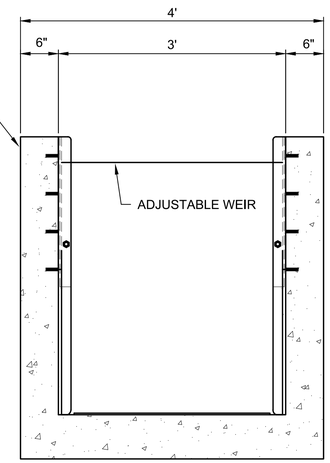
STORMWATER TREATMENT SYSTEM NOTES:

1. STORAGE CHAMBERS SHALL BE STORMTECH SC-740 OR APPROVED EQUAL.
2. STORM CHAMBERS SHALL BE INSTALLED WITH 6" COVER STONE, 6" FOUNDATION STONE, AND EMBEDDED WITH STONE.
3. INSTALLED SYSTEM VOLUME MUST MEET OR EXCEED 6,900 CUBIC FEET.
4. INSTALLED VOLUME PER CHAMBER = 74.9 CUBIC FEET.
5. CHAMBER SYSTEM LAYOUT AND ORIENTATION FOR BIDDING PURPOSES ONLY. SITE SPECIFIC SHOP DRAWINGS OF THE UNDERGROUND INFILTRATION SYSTEM, BYPASS WEIRS AND CONNECTION MANHOLES TO BE PROVIDED BY THE CONTRACTOR WITH THE FINAL DESIGN BEING COMPLETED BY THE SYSTEM MANUFACTURER, BUT REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
6. CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO MANUFACTURERS SPECIFICATIONS.
7. CONNECTION MANHOLE IS CONSIDERED INCIDENTAL TO ITEM M-700-1.



PLAN VIEW





ADJUSTABLE WEIR - TYPICAL

SECTION A-A - ADJUSTABLE WEIR NOT SHOWN FOR CLARITY

DIVERSION WEIR IN EXISTING CATCH BASIN DETAIL

NOT TO SCALE
(ITEM D-751-5.6)

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MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DRAINAGE DETAILS (4 OF 5)

SCALE: NTS | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
GR-09

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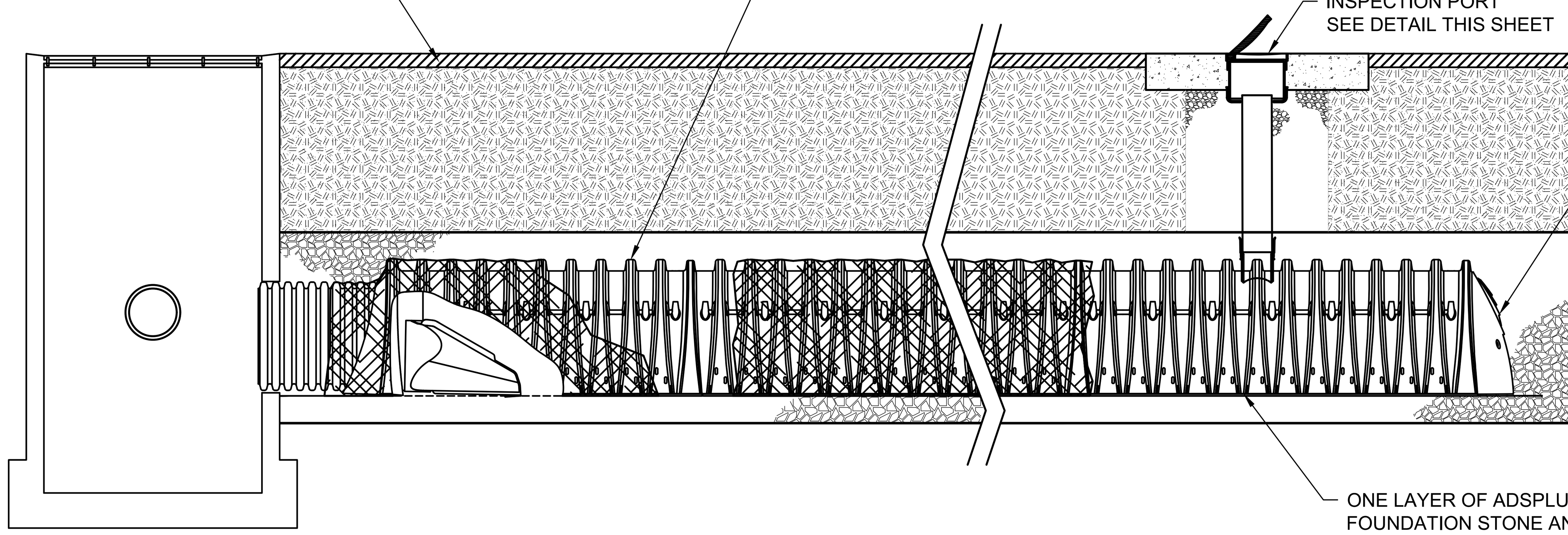
REV

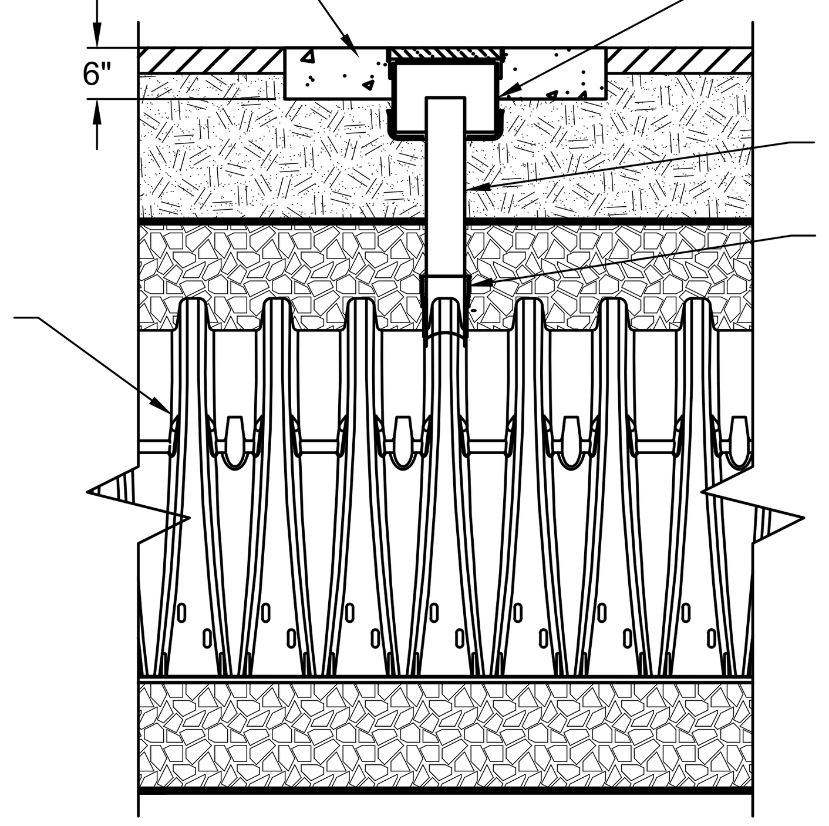


ISOLATOR ROW DETAIL

NOT TO SCALE

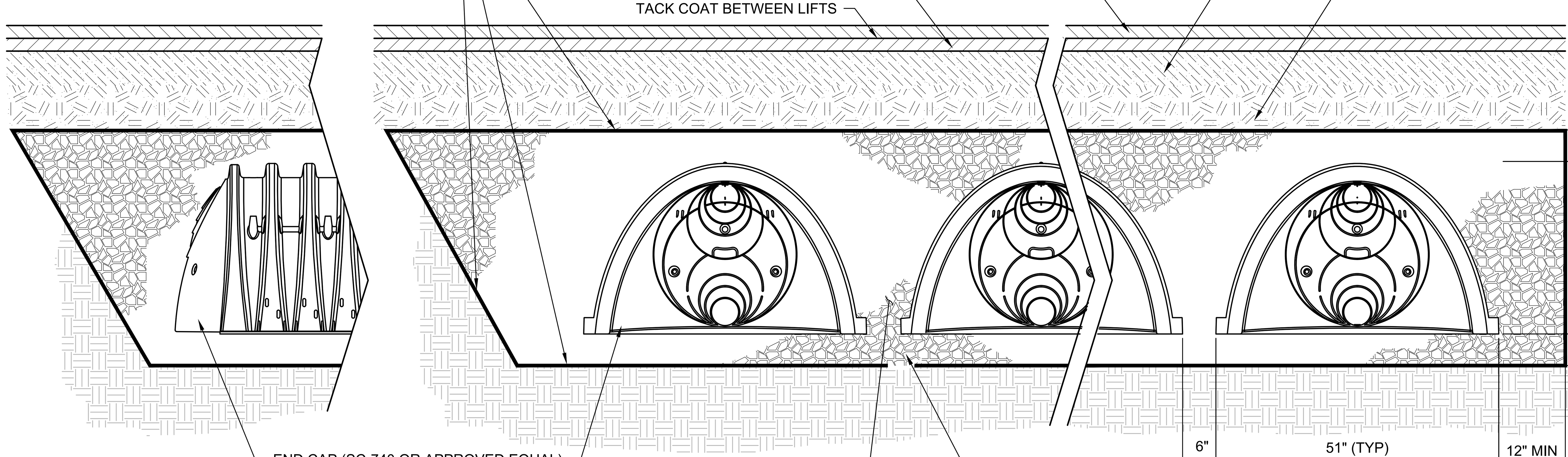
ISOLATOR ROW INSPECTION AND MAINTENANCE NOTES:

1. INSPECT ISOLATOR ROW FOR SEDIMENT
   - 1.1. INSPECTION PORT
     - 1.1.1. OPEN INSPECTION PORT LID
     - 1.1.2. MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
     - 1.1.3. LOWER CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION (OPTIONAL)
     - 1.1.4. IF SEDIMENT IS AT OR ABOVE 3", PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
   - 1.2. ISOLATOR ROW
     - 1.2.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
     - 1.2.2. INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
     - 1.2.3. IF SEDIMENT IS AT OR ABOVE 3", PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
2. CLEAN OUT ISOLATOR ROW USING JETVAC PROCESS
   - 2.1. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
   - 2.2. VACUUM STRUCTURE SUMP, AS REQUIRED
3. REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS



4" PVC INSPECTION PORT DETAIL

NOT TO SCALE



STORMWATER TREATMENT SYSTEM NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
4. FOUNDATION STONE LAYER SHALL BE PLACED AND COMPACTED IN (1) 6" LIFT USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR. WHERE INFILTRATION SURFACES MAY BE COMPRIMISED BY COMPACTION, A FLAT SUFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT.
5. NO COMPACTION IS REQUIRED FOR EMBEDMENT STONE LAYER.
6. BEGIN COMPACTIONS AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS, AS NECESSARY, IN 6" MAX LIFTS TO 95% PROCTOR DENSITY.

STORMWATER TREATMENT INFILTRATION SYSTEM DETAIL

NOT TO SCALE
(ITEM M-750-1)

ENGINEER'S SEAL

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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

DRAINAGE DETAILS (5 OF 5)

SCALE: NTS
DATE: MARCH 2022

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MJ PROJ. No.: 18700.08
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AIP No.: 3-33-0011-XXX-2021

DRAWING NO.

GR-10

REV

EROSION CONTROL SPECIFICATIONS FOR UPLAND AREAS:

1. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

2. RECOGNIZING THAT IMMEDIATE ATTENTION TO EROSION CONTROL PRACTICES DRAMATICALLY IMPROVES SOIL AND MOISTURE CONSERVATION AND REDUCES NEGATIVE IMPACTS ON WATER QUALITY. THE CONTRACTOR SHALL GIVE HIGH PRIORITY TO THE DAILY AND TIMELY INSTALLATION OF BOTH TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES. IMMEDIATE INSTALLATION OF PRACTICES USUALLY REDUCES LONG TERM COSTS TO THE CONTRACTOR AND PROVIDES BENEFITS TO THE DEVELOPER AND THE PUBLIC GOOD.

3. EROSION CONTROL PRACTICES ARE SHOWN ON THE PLANS WITH RESPECT TO LOCATION AS DETERMINED FROM EXISTING TOPOGRAPHY. CHANGES MAY BE INDICATED IN THE FIELD TO IMPROVE EROSION AND SEDIMENT CONTROL.

4. CONSTRUCTION SHALL PROCEED UNIT BY UNIT TO FACILITATE INSTALLATION OF EROSION CONTROL MEASURES AND THE COMPLETION OF GRADING, SEEDING, AND LANDSCAPING AS SOON AS POSSIBLE WITHIN A UNIT. THIS PROCEDURE SHOULD RESULT IN THE EXPOSURE OF THE SMALLEST PRACTICAL LAND AREA AT ANY ONE TIME.

5. PRIOR TO ANY DISTURBANCE WITHIN EXISTING GRASSLAND AREAS DEPTH OF TOPSOIL SHALL BE EVALUATED BY A BIOLOGIST, AND EXISTING TOPSOIL SHALL BE REMOVED AND STOCKPILED SITE FOR RESTORATION OF GRASSLAND AREAS.

6. ALL DISTURBED UPLAND AREAS SHALL HAVE TOPSOIL SPREAD (3" MINIMUM (REFER TO PLANS)) WITHIN TWO WEEKS AND BE LIMED, FERTILIZED, TILLED, SEEDED AND MULCHED. ALL SLOPES 3:1 (1 RISE ON 3 RUN) AND STEEPER SHALL HAVE MULCH HELD IN PLACE WITH BIODEGRADABLE JUTE NETTING OR EROSION CONTROL BLANKET, STAPLED AND STAKED. EACH AREA SHALL BE LIMED, FERTILIZED, PREPARED, SEEDED AND MULCHED (WITH ANCHORED NETTING OR BLANKET IF REQUIRED) WITHIN 14 DAYS OF FINAL GRADING. WHEN PERMANENT SEEDING CANNOT BE INSTALLED BY SEPTEMBER 15, TEMPORARY SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE INSTALLED IMMEDIATELY AND MAINTAINED IN THAT CONDITION UNTIL PERMANENT PRACTICES CAN BE INSTALLED IN THE FOLLOWING PLANTING SEASON.

7. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHF&G NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT *NHFGREVIEW@WILDLIFE.NH.GOV*, WITH THE EMAIL SUBJECT LINE CONTAINING THE NHB DATACHECK TOOL RESULTS LETTER ASSIGNED NUMBER, THE PROJECT NAME, AND THE TERM WILDLIFE SPECIES OBSERVATION.

8. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.

9. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO THE CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.

10. THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

11. TEMPORARY STABILIZATION OF DISTURBED UPLAND AREAS (IF REQUIRED):

    SEEDBED PREPARATION: TILL FOUR INCHES DEEP MIXING IN FERTILIZER AND GROUND LIMESTONE.
    APPLY LIMESTONE 2 TONS/ACRE (100#/1,000 SQ. FT.) OR ACCORDING TO SOIL TEST.

    FERTILIZE: UNIFORMLY APPLY NOT LESS THAN 400#/ACRE (14#/1,000 SQ. FT.) OF 10-10-10 OR EQUIVALENT OR AS INDICATED BY SOIL TEST. FORTY PERCENT OF NITROGEN SHOULD BE IN ORGANIC FORM.

    SEEDING: SELECT APPROPRIATE SEEDING MIXTURE FROM TABLE 1 BELOW. SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.

    MULCHING: MULCH ALL DISTURBED AREAS WITH 2 TONS OF HAY OR STRAW PER ACRE (90-100#/1,000 SQ. FT.). ANCHOR ON ALL SLOPES 3:1 OR STEEPER AND FLATTER SLOPES SUBJECT TO WASH OR WIND BLOWN. USE JUTE (OR OTHER BIODEGRADABLE) NETTING OR BLANKET. STAKING AND STAPLING MAY BE REQUIRED.

12. PERMANENT STABILIZATION OF DISTURBED UPLAND AREAS:
    SEED BED PREPARATION: TOPSOIL (SANDY TOPSOIL, TOPSOIL, OR SILT TOPSOIL), FRIABLE, FREE OF TREE ROOTS, WEEDS, STONES MORE THAN 1-1/2 INCHES IN DIAMETER OR LENGTH SHALL BE PLACED OVER ALL DISTURBED AREAS IN A 4" MINIMUM (REFER TO PLANS) THICK LAYER.

    TOPSOIL: IMPORTED TOPSOIL SHALL BE MIXED ON-SITE WITH NATIVE TOPSOIL AND SHALL BE MIXED ON SIGHT ROUGHLY 4:1 TO THE TEXTURE OF THE EXISTING SOILS. LAB ANALYSIS OF EXISTING REMOVED TOPSOIL SHALL BE PERFORMED BY THE CONTRACTOR TO DETERMINE ORGANIC CONTENT AND TEXTURE OF THE NATIVE TOPSOIL FOR A MORE ACCURATE RATIO OF THE FINAL IMPORTED TOPSOIL AND STOCKPILE MIXTURE. SOILS SHALL BE FREE OF INVASIVE SPECIES, HERBICIDES AND TOXIC MATERIALS. SOIL SHALL BE INSPECTED AND APPROVED BY BIOLOGIST AND ENGINEER PRIOR TO USE.

SEEDING: WARM SEASON SEED MIX:

A. NE NATIVE WARM SEASON GRASS MIX	LBS/ACRE
LITTLE BLUESTEM	- (50%)
BIG BLUESTEM	- (10%)
VIRGINIA WILD RYE	- (10%)
INDIAN GRASS	- (10%)
RED FESCUE	- (10%)
SWITCH GRASS	- (10%)
TOTALS -	23 LBS/ACRE

*PERCENT MAY VARY AS APPROVED BY BIOLOGIST

SEEDING METHODS: SEEDING SHOULD BE PERFORMED BY THE FOLLOWING METHOD:
HYDROSEEDING WITH SUBSEQUENT TRACKING.
TRACKING THE SEEDING WITH SMALL TRACK CONSTRUCTION EQUIPMENT. TRACKING SHOULD BE ORIENTED UP AND DOWN THE SLOPE.

MULCHING: MULCH ALL DISTURBED AREAS WITH 2 TONS OF FIBER PER ACRE (90 - 100#/1,000 SQ. FT.).
ANCHOR ON ALL SLOPES 3:1 OR STEEPER AND ON FLATTER SLOPES SUBJECT TO WASH (WATERWAYS AND/OR WINDBLOWN) USING JUTE (OR OTHER BIODEGRADABLE) NETTING OR EROSION CONTROL BLANKET, STAKING, AND STAPLING.

MAINTENANCE: INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEED IMMEDIATELY. CONDUCT A FOLLOW-UP SURVEY AFTER ONE YEAR AND REPLACE FAILED PLANTS WHERE NECESSARY. IF VEGETATIVE COVER IS INADEQUATE TO PREVENT EROSION, OVERSEED AND FERTILIZE IN ACCORDANCE WITH SOIL TEST RESULTS. IF A STAND HAS LESS THAN 40% COVER, REEVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. RE-ESTABLISH THE STAND FOLLOWING SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS, OMITTING LIME AND FERTILIZER IN THE ABSENCE OF SOIL TEST RESULTS. IF THE SEASON PREVENTS RESOWING, MULCH OR (7. CONT.) JUTE NETTING IS AN EFFECTIVE TEMPORARY COVER. SEEDED AREAS SHOULD BE FERTILIZED DURING THE SECOND GROWING SEASON. LIME AND FERTILIZE THEREAFTER AT PERIODIC INTERVALS, AS NEEDED.

8. TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.

9. MAINTENANCE: DURING THE CONSTRUCTION PERIOD AND UNTIL SUCH TIME AS THE LONG TERM VEGETATION IS ESTABLISHED TO A 85% VEGETATIVE STAND.
   A. DISTURBED AREAS WILL BE FERTILIZED AND RESEEDED.
   B. CATCH BASINS AND FILTER BAGS WILL BE CHECKED AND CLEANED AS NECESSARY.
   C. DRAINAGE AND GRASS TREATMENT SWALES SHALL BE CHECKED FREQUENTLY AND CLEANED AS REQUIRED.
   D. THE SILT FENCES WILL BE CHECKED ON A REGULAR BASIS AND REPAIRED AS NECESSARY TO CORRECT ANY DAMAGE, DETERIORATION, AND SHORT-CIRCUITING.

10. REFER TO "GRADING PLANS" FOR THIS PROJECT PRIOR TO ANY SITE DISTURBANCE.

11. INSPECTIONS: THE ENGINEER SHALL BE CONTACTED ON A REGULAR BASIS TO INSPECT ALL EROSION CONTROL PRACTICES AS WELL AS THE MAINTENANCE OF THE EROSION CONTROL COMPONENTS. REFER TO CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. EROSION CONTROL PRACTICES SHALL BE IN STRICT ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

12. THE MAXIMUM AMOUNT OF AREA TO BE DISTURBED AND UNSTABLIZED SHALL BE 5 ACRES AT ANY ONE TIME.

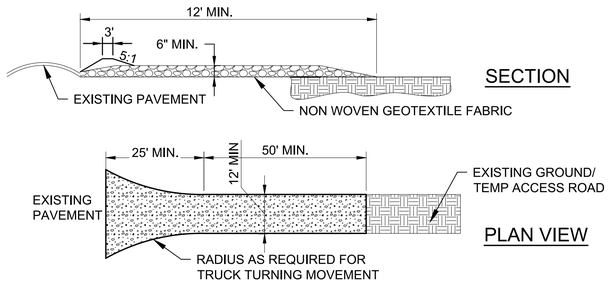
13. THE MAXIMUM AMOUNT OF TIME ANY AREA MAY BE DISTURBED WITHOUT STABILIZATION SHALL BE 14 DAYS.

CONSTRUCTION SEQUENCE

1. INSTALL INLET PROTECTION/FILTER BAGS AT ALL LOCATIONS INDICATED ON PLAN OR AT OTHER LOCATIONS AS DETERMINED BY ENGINEER. INSTALL OTHER TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AS EARTHWORK PROCEEDS.
2. CONTRACTOR SHALL LEGALLY DISPOSE OF ALL SURPLUS UNCLASSFIED EXCAVATION AT AN APPROVED LOCATION NOTED IN THE SPECIFICATIONS.
3. REMOVE EXISTING PAVEMENT AND SUBBASE AS REQUIRED.
4. INSTALL NEW BASE AND SUBBASE.
5. INSTALL UTILITIES AS REQUIRED.
6. PAVE NEW AREAS.
7. GRADE AREA AS SHOWN ON PLANS AND LOAM, FERTILIZE AND SEED AREAS TO ESTABLISH VEGETATION.
8. INSPECT ALL DISTURBED AREAS ON A DAILY BASIS. FOLLOWING THIS DAILY INSPECTION, INSTALL AS REQUIRED ANY AND ALL TEMPORARY DRAINAGE, EROSION, AND SEDIMENT CONTROL PRACTICES AS INDICATED, I.E., DIVERSION CHANNELS, BERMS, DRAINS, DITCHES, STONE DIKES, SILT FENCES, SEED AND MULCH OR OTHER PRACTICES AS RECOMMENDED AND SPECIFIED IN THE "CONNETICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS".
9. CLEAN AND RESTORE SILT DESTINATION SITES. REMOVE OTHER EROSION CONTROL PRACTICES ON A TIMELY BASIS AS PERMANENT MEASURES TAKE HOLD. SPOT FERTILIZE, SEED, AND MULCH AS REQUIRED.
10. INSPECT AND MAINTAIN GRADING, EROSION CONTROL AND SEDIMENT CONTROL PRACTICES WEEKLY AND IMMEDIATELY AFTER ALL SUBSTANTIAL STORMS.
11. REFER TO "GRADING, DRAINAGE, AND EROSION CONTROL PLANS" FOR ADDITIONAL DETAILS RELATIVE TO THE REQUIRED CONSTRUCTION SEQUENCE. MAINTENANCE OF ALL EROSION CONTROL COMPONENTS SHALL BE AN ONGOING PRACTICE AND IN STRICT ACCORDANCE WITH THE APPROVED PLAN.

TABLE 1 – TEMPORARY UPLAND STABLIZATION
PLANT SELECTION AND SEEDING RATES

SPECIES	PER ACRE	PER 1000 SQ.FT.	REMARKS
WINTER RYE	120 LBS.	3 LBS.	BEST FOR FALL SEEDING. SEED AUGUST 15 TO OCTOBER 15 FOR BEST COVER. SEED TO DEPTH OF ONE TO 1 1/2 INCHES.
OATS	2 1/2 BU OR 80 LBS.	2 LBS.	BEST FOR SPRING SEEDINGS. SEED BETWEEN APRIL 1 TO JULY 1 OR AUGUST 15 TO SEPTEMBER 15. SEED TO DEPTH OF ONE INCH.
ANNUAL RYE	40 LBS.	1 LB.	GROWS QUICKLY. BUT IS OF SHORT GRASS DURATION USE WHERE APPEARANCES ARE IMPORTANT. COVER SEED WITH NO MORE THAN 1/4 INCH OF SOIL. WITH MULCH, SEEDING MAY BE DONE THROUGHOUT GROWING SEASON. SEED BETWEEN APRIL 1 AND JUNE 1 OR AUGUST 15 & SEPTEMBER 15.
FOXTAIL MILLET	30 LBS.	0.7 LB.	MAY 1 TO JUNE 30. SEED TO DEPTH OF 1/2 TO 3/4 INCH.

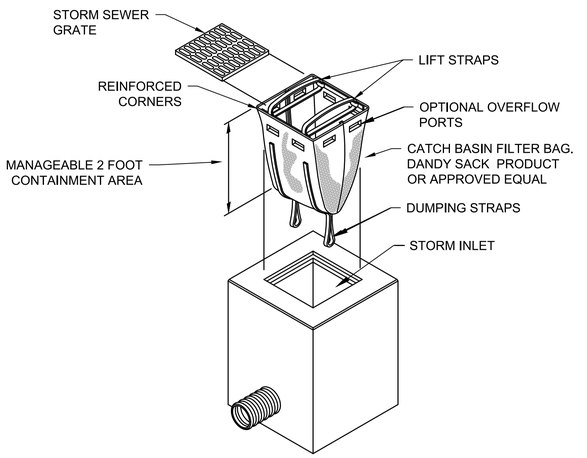


STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE
(ITEM C-102-5.3)

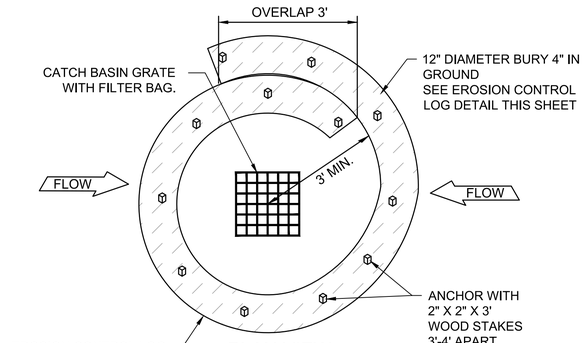
STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. STONE SIZE-USE 1"-3" STONE, RECLAIMED OF RECYCLED CONCRETE EQUIVALENT
2. LENGTH - NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN 8".
4. WIDTH - 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.



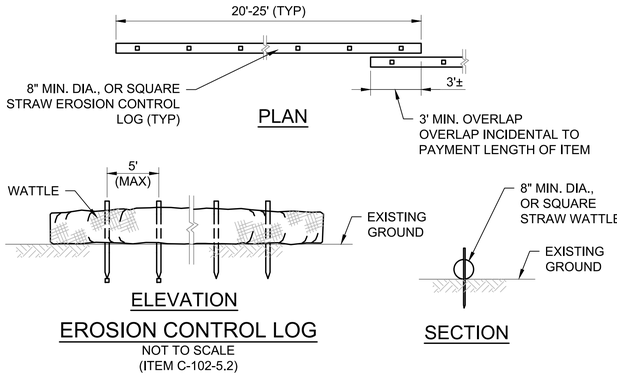
INLET PROTECTION (FILTER BAG) INSTALLATION

NOT TO SCALE
(ITEM C-102-5.1)



INLET PROTECTION

NOT TO SCALE
(ITEM C-102-5.1, C-102-5.2)



EROSION CONTROL LOG

NOT TO SCALE
(ITEM C-102-5.2)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

EROSION CONTROL DETAILS (1 OF 1)

SCALE: NTS | DATE: MARCH 2022

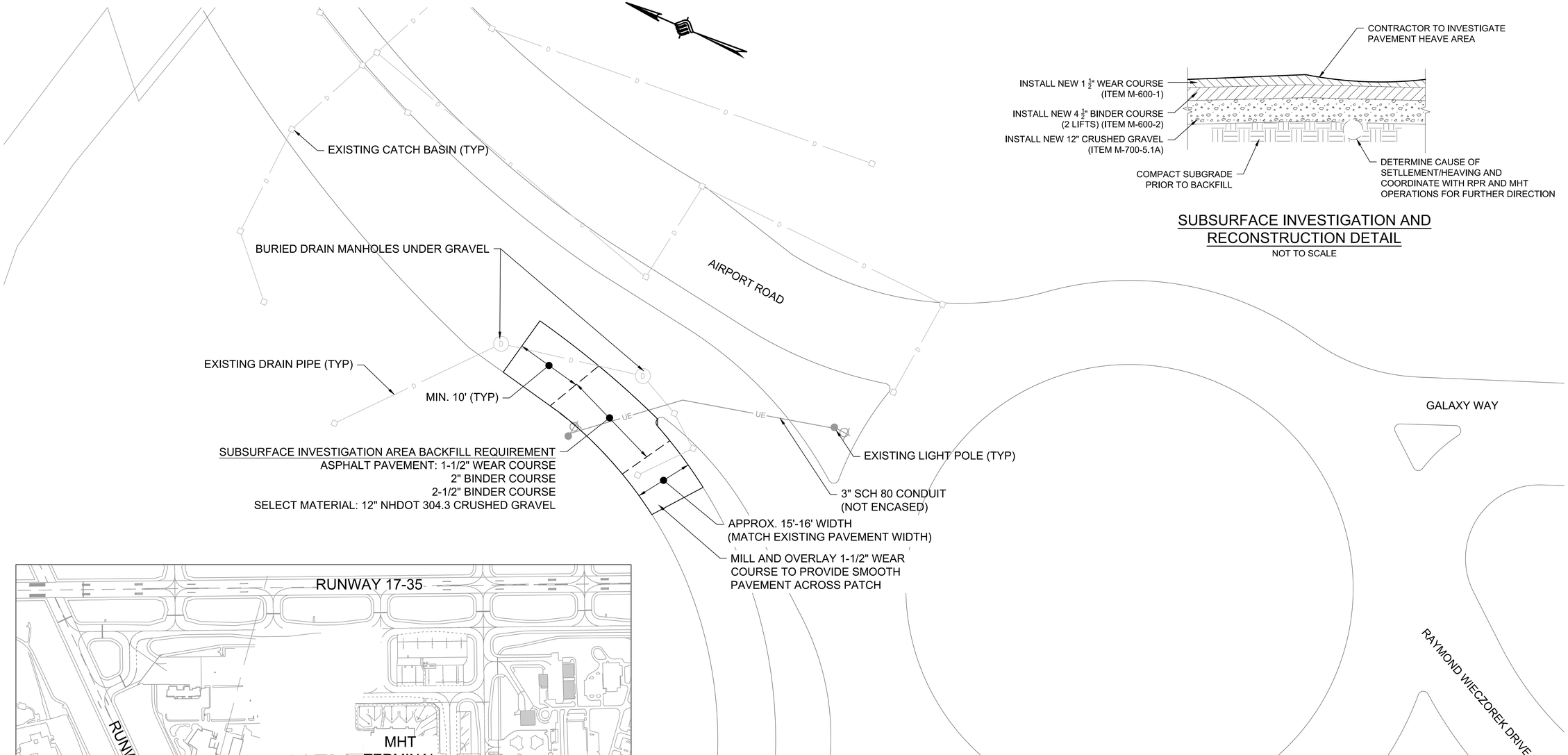
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

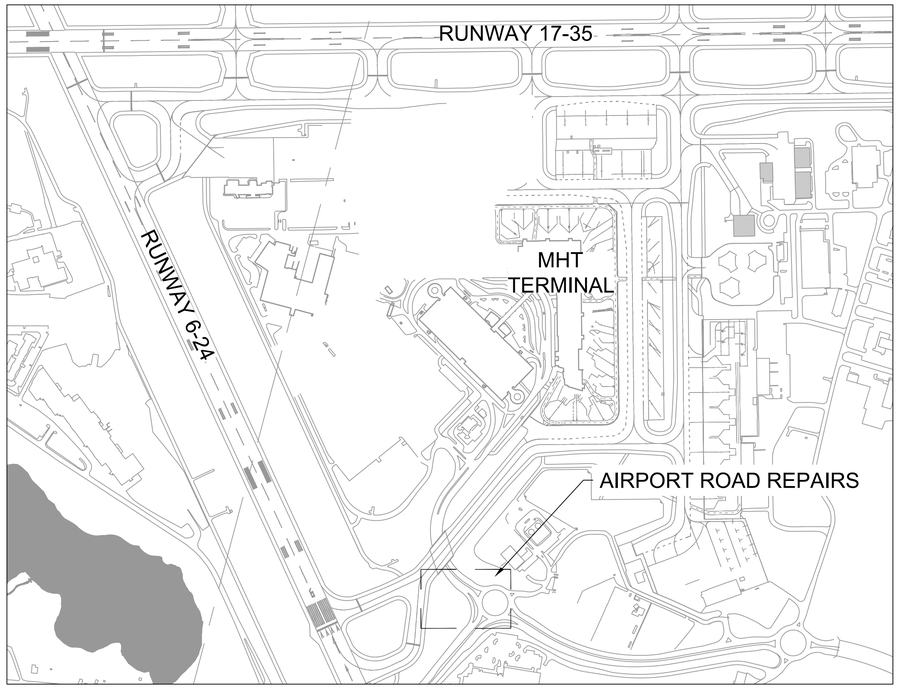
DRAWING NO.
EC-01

SHEET 55 OF 90 REV



SUBSURFACE INVESTIGATION AND RECONSTRUCTION DETAIL

NOT TO SCALE



KEY PLAN

SCALE: 1" = 500'

NOTES:

1. CONTRACTOR TO INVESTIGATE THE CAUSE OF THE PAVEMENT SETTLEMENT/HEAVING IN THE AREA SHOWN. BACKFILL REQUIREMENTS ARE INTENDED TO MATCH THE EXISTING CONDITIONS. EXACT LIMITS TO BE DETERMINED IN THE FIELD WITH THE RPR.
2. PAYMENT FOR EXCAVATION AND RECONSTRUCTION WORK WILL BE THROUGH THE LINE ITEMS SHOWN. ANY ADDITIONAL WORK NEEDED BASED ON WHAT IS FOUND FROM EXCAVATION WILL BE COORDINATED WITH THE RPR AND AIRPORT AND CHANGE ORDER WILL BE ISSUED, IF NECESSARY.
3. ALL UNDERGROUND UTILITIES SHOWN ARE FROM RECORD PLANS AND ARE CONSIDERED APPROXIMATE ONLY.
4. CONSTRUCTION SEQUENCE:
   - REMOVE EXISTING PAVEMENT WITHIN AREA SHOWN (P-101-5.1)
   - EXCAVATE EXISTING GRAVEL (P-152-4.1)
   - INVESTIGATE SUBSURFACE CONDITIONS
   - COORDINATION WITH RPR AND MHT MAINTENANCE
   - COMPACT SUBGRADE (INCIDENTAL TO BASE COURSE INSTALLATION)
   - INSTALL NEW 12" CRUSHED GRAVEL BASE COURSE (M-700-5.1A)
   - PAVE 2 ½" LIFT BINDER COURSE (M-600-2)
   - PAVE 2" LIFT BINDER COURSE (M-600-2)
   - MILL 1 ½" DEPTH FOR MIN. 10' ON EACH SIDE OF INVESTIGATION AREA (P-101-5.6)
   - PAVE 1 ½" WEAR COURSE (M-600-1)

0 20 40 60 FT

SCALE

ENGINEER'S SEAL

THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER

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DESIGNED BY DPB | DRAWN BY KJM | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

AIRPORT ROAD REPAIRS

SCALE: 1" = 20' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

FILE NAME:

AIP No.: 3-33-0011-XXX-2021

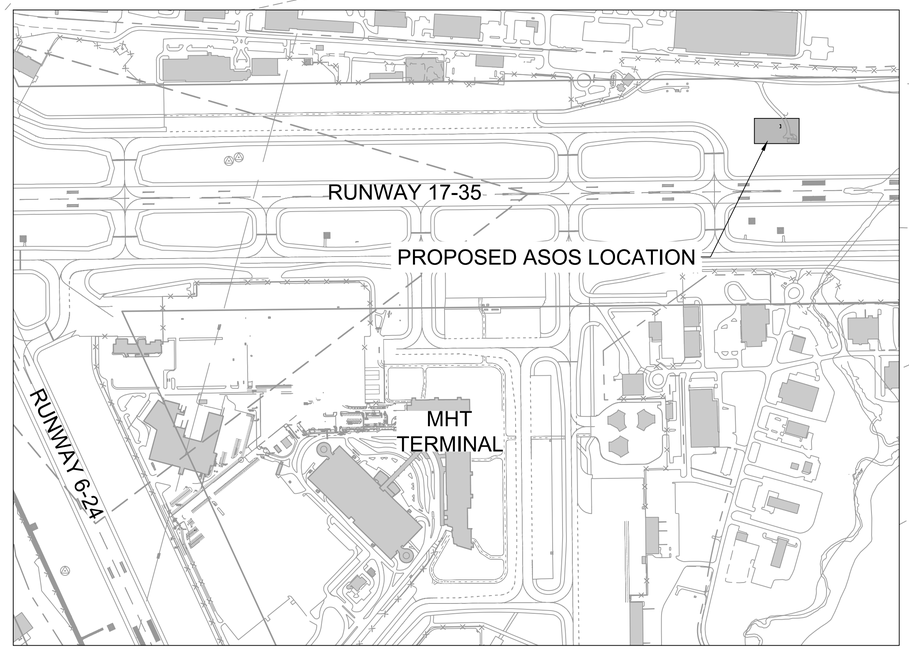
DRAWING NO.

AR-01

SHEET 56 OF 90

REV

PROPOSED CONTOURS
PROPOSED SPOT ELEVATION (TYP)
GRAVEL WALKWAY
ASOS EQUIPMENT RACK
WIND TOWER
EXISTING CONTOUR (TYP)
CONCRETE PAD FOR CONTROL PANEL
GENERATOR
POWER CABINET
UNDERGROUND LP TANK
ASPHALT DRIVE
CONSTRUCT NEW DRIVEWAY ACCESS TO ASOS. CONTRACTOR TO LAY OUT TO THE APPROVAL OF THE RPR SEE TYPCIAL SECTION B-B ON SHEET TS-01
EQUIPMENT RAIL
37.5kVA TRANSFORMER CABINET
CRUSHED STONE
GLIDE SLOPE SHELTER
EQUIPMENT PAD
RUNWAY 35 GLIDE SLOPE ANTENNA
TOUCH-DOWN RVR
4"-2 WAY (C. FAA)
242.5
243
243.5
244
244.5
245
245.5
246
246.5
247
247.5
244.18
244.19
244.41
244.42
-0.5%
15'
R15'
B
PWR
FAA-PWR
ROFA
EMH
FAA
DUCT
PSNH
E



KEY PLAN

1" = 500'

0 10 20 30 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BERNIER
No. 7416
LICENSED PROFESSIONAL ENGINEER

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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ASOS SITE PLAN

SCALE: 1" = 10' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
AS-01

SHEET 57 OF 90
REV

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH DOD–STD–100.

2. MATERIAL: FN1, FN3, FN4–STEEL PIPE, GLV. WLD, TYPE F, SPEC ASTM A53, 3,000 IPS, SCHED 40.

   FN23 – RIGID STEEL CONDUIT, GALV, SPEC ANSI C80.1, 1.00 NPS. FOR ALTERNATE WIND TOWER LOCATION, LENGTH MAY VARY DUE TO LOCATION OF WIND TOWER FOUNDATION.

   FN8–STONE AGGREGATE CONCRETE, MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 6% ±1.50%. ADMIXTURES CONTAINING CALCIUM ARE NOT PERMITTED. MAXIMUM AGGREGATE SIZE 1.00, AND MAXIMUM SLUMP 4.00.

   FN9–GRAVEL SHALL BE DURABLE PARTICLES OF ROCK, FREE OF DELTERIOUS SUBSTANCES; 100 PERCENT OF THE AGGREGATE SHALL PASS A ONE–INCH SIEVE AND LESS THAN 60 PERCENT SHALL PASS A #4 SIEVE. THE GRAVEL SHALL BE OF A COMPOSITION AND COLOR COMMON TO THE LOCALE OF THE SITE.

3. WORKMANSHIP SHALL BE IN ACCORDANCE WITH MIL–HDBK–454, GUIDELINE 9.

4. THREADS AND ACCEPTABILITY REQUIREMENTS SHALL BE IN ACCORDANCE WITH FED–STD–H28/7.

5 DELETED

△6 FLANGE SHALL BE WITHIN ±1° OF HORIZONTAL IN ALL DIRECTIONS.

△7 CONCRETE MATERIAL SHALL BE PER NOTE 2, WORK SHALL CONFORM TO:

- ACI 301–89 – STRUCTURAL CONCRETE FOR BUILDINGS.
- ACI 318–89 – BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- ACI 305R–77 (82) – RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING.
- ACI 306R–78 – RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING.
- ACI 347–78 – RECOMMENDED PRACTICE FOR CONCRETE FORMWORK.

FOOTINGS ARE DESIGNED FOR AN ASSUMED NET SOIL BEARING PRESSURE OF 2000 PSF. NOTIFY PROCURING ACTIVITY IF SOIL BEARING PRESSURE IS LESS THAN 2000 PSF.

BROOM FINISH TOP OF ALL FOOTINGS AND CONCRETE PAD.

△8 MINIMUM FOOTING DEPTH OR FROST DEPTH, WHICHEVER IS GREATER. FROST DEPTH INFORMATION IS LOCATED IN SITE SURVEY.

△9 WHEN THE WIND TOWER IS DETACHED FROM THE MAIN SENSOR GROUP NO GRAVEL WALKWAY SHALL CONNECT TO THE SENSOR GROUP.

△10 ANGLE IS LIMITED TO 45° MAX WHEN WIND SENSOR TOWER IS WITHIN 27 FEET OF DCP MOUNTING POLES.

△11 ALL COMBINATIONS OF ANGLES ARE ACCEPTABLE WITHIN THE CONSTRAINTS GIVEN. IT IS PREFERRABLE THAT ONLY ONE WING ROTATE FROM THE ORIGINAL LINEAR ARRAY PATTERN.

△12 PEDESTAL FLANGES MUST MAINTAIN A NORTH–SOUTH ORIENTATION REGARDLESS OF THE ANGULAR POSITION OF EITHER PEDESTAL WING.

△13 SEE DRAWING 62828–40490 FOR INSTALLATION AND CABLE ROUTING OF FN20. FINAL LOCATION TO BE DETERMINED AT INSTALLATION.

△14 ADDITIONAL GROUND RODS, FN11, AND CABLE, FN12, SHALL BE INSTALLED AS NECESSARY. GROUND CABLE IS A CONTINUOUS LOOP. ALL GROUNDING SYSTEM CONNECTIONS SHALL BE EXOTHERMICALLY WELDED, IE, CABLE INTERSECTIONS, GROUND ROD CONNECTIONS AND SPLICES. ALL WELDING MATERIALS USED SHALL BE CADWELD MATERIALS, MANUFACTURED BY ERICO PRODUCTS INC, CAGEC: 14045, OR SIMILAR. ALL MATERIALS MUST BE FROM THE SAME SOURCE TO INSURE COMPATABILITY. CONNECTIONS MADE FROM THIS PROCESS MUST MEET REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, ARTICLE 250. ARRANGEMENT OF THE GROUNDING RODS MAY VARY BETWEEN SITES. SEE THE SITE SURVEY.

15. WIRE PER ELECTRICAL PLAN AND INTERCONNECT DIAGRAM, FN 21.

△16 INSTALL CABLE PART NO.: 62828–90493–1 OR 62828–90493–2 OR 62828–90493–3 OR 62828–90493–4 OR 62828–90493–5 OR 62828–90493–6.

△17 USE HEX NUTS, FN 25, AS JAM NUTS ON EITHER SIDE OF COUPLING NUT, FN 28.

△18 SET COUPLING NUT, FN 28 FLUSH WITH CONCRETE SURFACE.

△19 USE 6" x 6" WIRE CONCRETE REINFORCEMENT MESH, FN 30, ROLLED INTO A 6" DIAMETER TUBE. INSERT 0'–3" TO 0'–6" BELOW SURFACE OF CONCRETE.

CURRENT DESIGN ACTIVITY CAGE CODE 82187
U.S DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE
SILVER SPRING MD 20910

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BERNIER
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
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DESIGNED BY DPB | DRAWN BY BRF | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ASOS DETAILS (1 OF 4)

SCALE: NTS | DATE: MARCH 2022

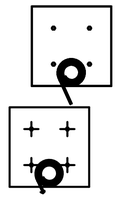
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3–33–0011–XXX–2021

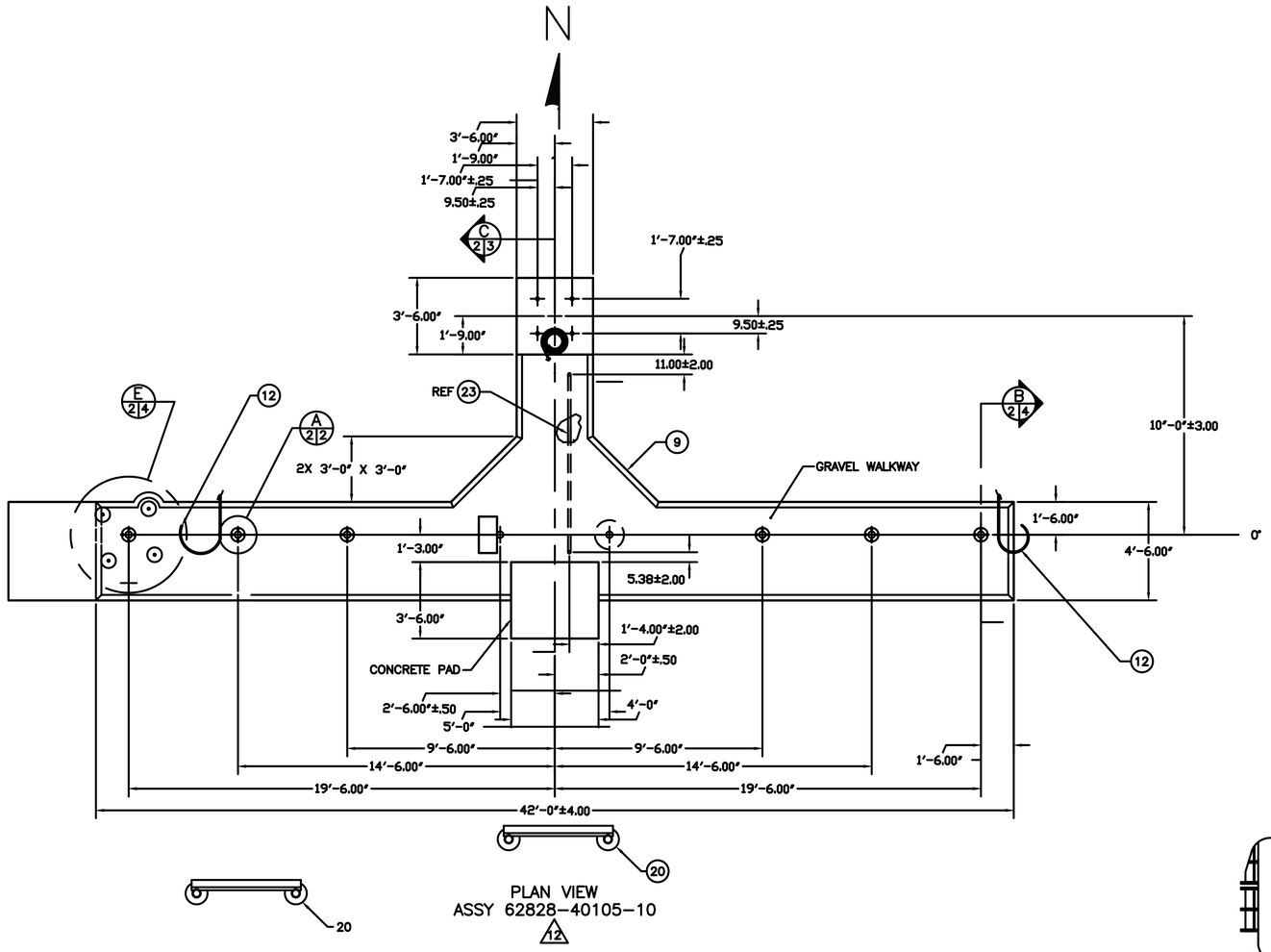
DRAWING NO.
AS–02

SHEET 58 OF 90 REV

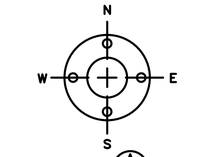


ALTERNATE WIND
TOWER LOCATION

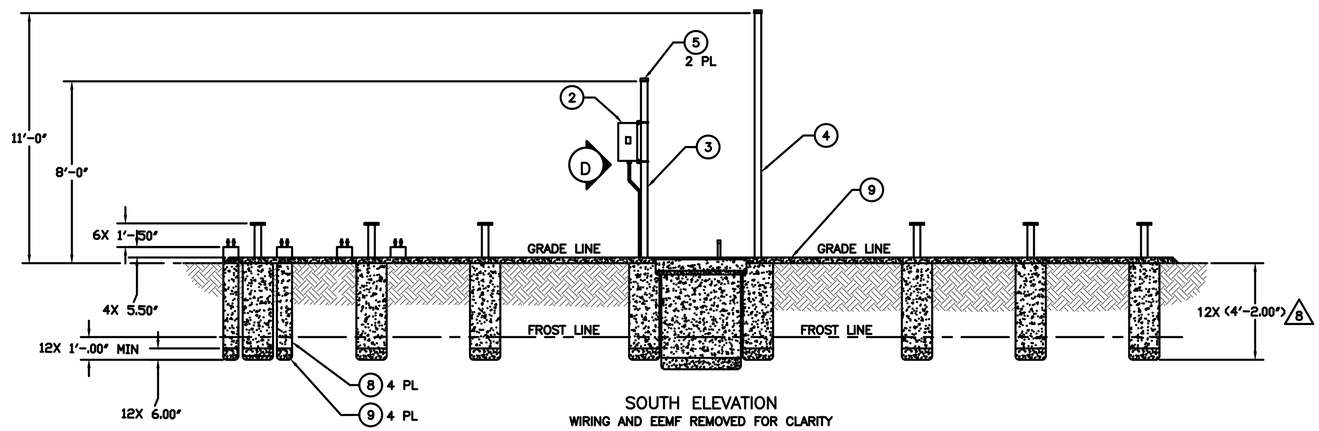
1. PIPE, PEDESTAL
2. POWER DISTR ASSY
3. PIPE, SUPPORT
4. PIPE, SUPPORT
5. CAP, PIPE
6. FLANGE 3X7 1/2 ' GLV
7. PIPE FLANGE
8. CONCRETE
9. GRAVEL
10. FILTER FABRIC
11. ROD, GROUND
12. WIRE, ELEC, COPPER 13 EASY SPLICE, GEL TAP,
14. CABLE
15. BOLT, ANCHOR
16. NUT, HEX, STL
17. WASHER, LOCK–SPR,
18. WASHER, FLAT 8 EA
20. ELEC EQPT MTG FRAME
21. ELEC SINGLE LINE DIAGRAM
22. 6COUPLING, PIPE
23. CONDUIT
24. STUD, CONTINUOUS THREAD, 1/2–13 UNC–2A, A193, 5.50 LG
25. NUT,PLAIN,HEX,CRES,1/2–13 UNC–2B
26. WASHER, LOCK–SPLIT,
27. WASHER, FLAT,ROUND,
28. NUT, COUPLING, 1/2–13 X1.75, 18–8 STAINLESS STEEL
29. BOLT, ANCHOR, BENT,1/2–13 X 12 X 2
30. WELDED WIRE FABRIC, 6 X 6 INCHES, 10 X 10 GAUGE
31. CABLE, JACKETED METAL CLAD
32. CABLE, JACKETED METAL CLAD



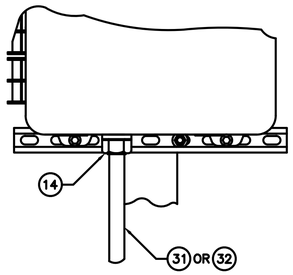
PLAN VIEW
ASSY 62828–40105–10
12



VIEW A 2|2
SCALE: 1/4
6 PLACES
BOLT PATTERN MUST BE
ALIGNED WITHIN ±5° OF N–S



SOUTH ELEVATION
WIRING AND EEMF REMOVED FOR CLARITY



VIEW D 2|2

ENGINEER'S SEAL
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DESIGNED BY DPB
DRAWN BY RHL
CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ASOS DETAILS (2 OF 4)

SCALE: NTS
DATE: MARCH 2022

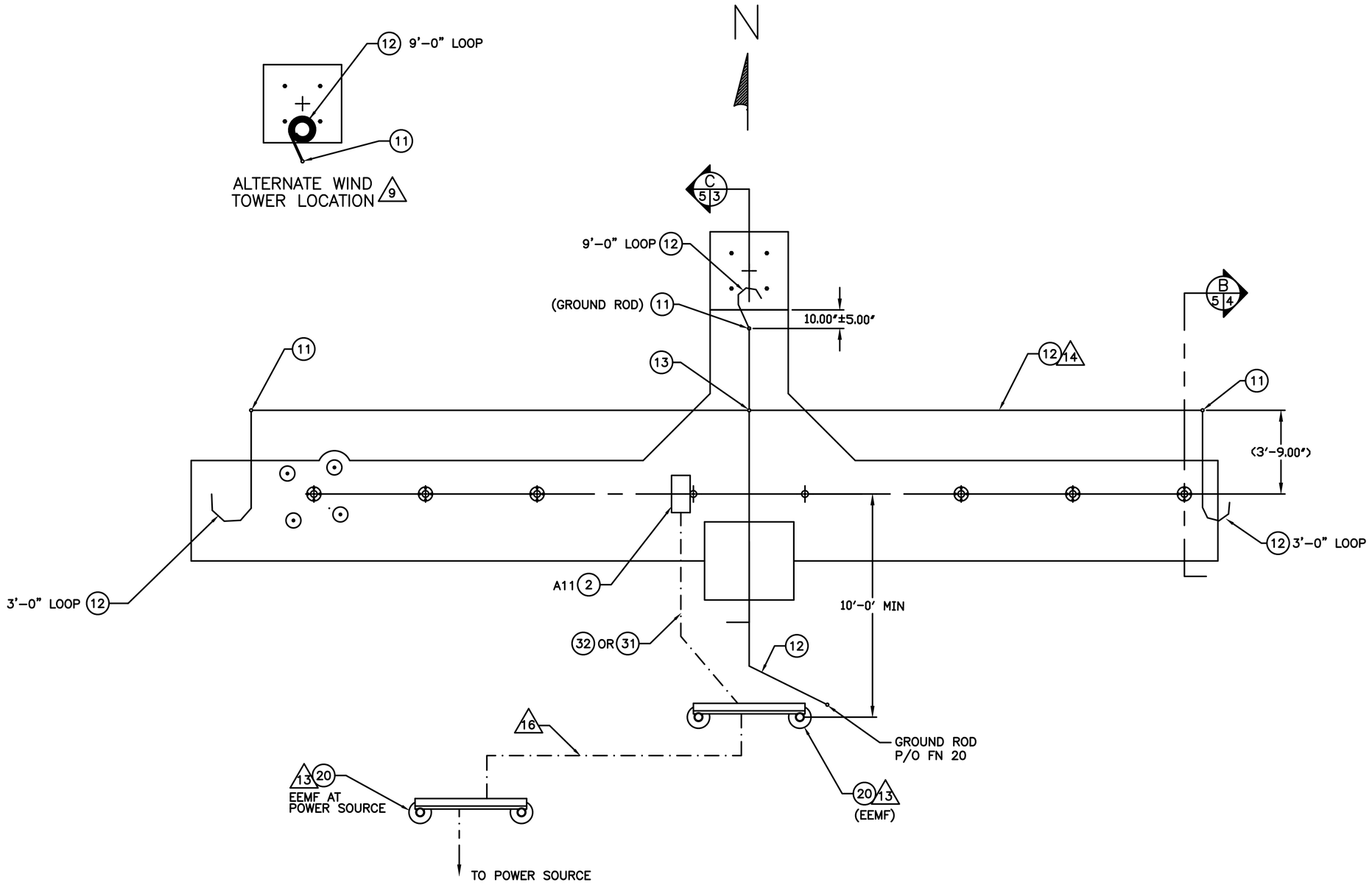
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3–33–0011–XXX–2021

DRAWING NO.
AS–03

SHEET 59 OF 90
REV



ELECTRICAL PLAN

ADDITIONAL GROUND RODS AND CABLE SHALL BE INSTALLED AS NECESSARY. GROUND CABLE IS A CONTINUOUS LOOP. ALL GROUNDING SYSTEM CONNECTIONS SHALL BE EXOTHERMICALLY WELDED, IE, CABLE INTERSECTIONS, GROUND ROD CONNECTIONS AND SPLICES. ALL WELDING MATERIALS USED SHALL BE CADWELD MATERIALS, MANUFACTURED BY ERICO PRODUCTS INC, CAGEC: 14045, OR SIMILAR. ALL MATERIALS MUST BE FROM THE SAME SOURCE TO INSURE COMPATABILITY. CONNECTIONS MADE FROM THIS PROCESS MUST MEET REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, ARTICLE 250. ARRANGEMENT OF THE GROUNDING RODS MAY VARY BETWEEN SITES. SEE THE SITE SURVEY.

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ASOS DETAILS (3 OF 4)

SCALE: NTS
DATE: MARCH 2022

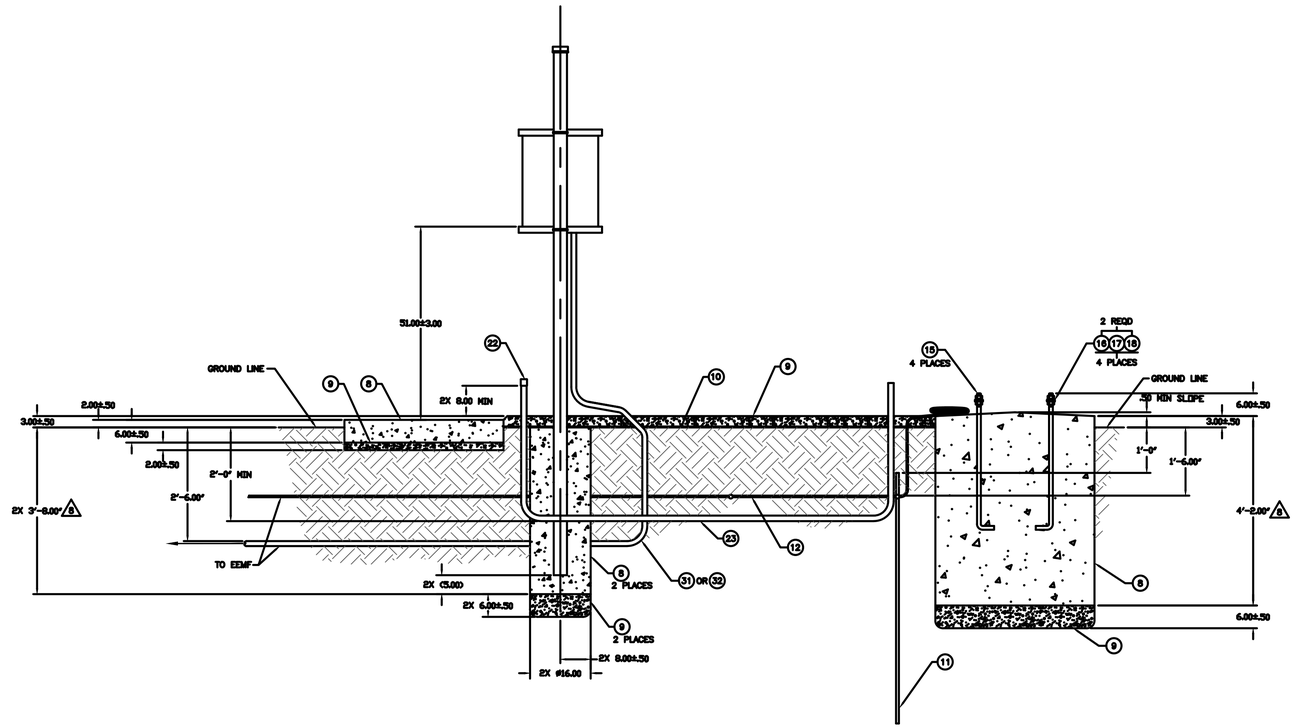
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

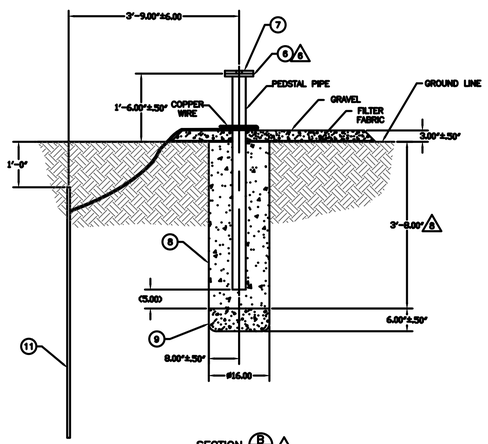
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
AS-04

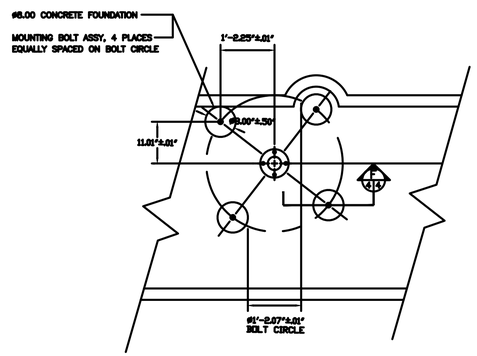
SHEET 60 OF 90
REV



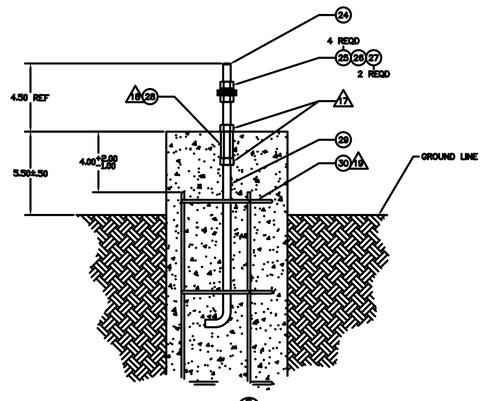
SECTION C/2&3 7
ROTATED 90° CCW



SECTION B/2&3 7
ROTATED 90° CCW
6 PLACES
FN11 AND FN12 INSTALLED
ON END PEDESTAL ONLY
SEE ELECTRICAL PLAN



VIEW F/4&5
LOCATIONS OF CONCRETE FOUNDATIONS
TO SUPPORT AWPAG WINDSHIELD ASSEMBLY



SECTION F/4&5
SCALE 1/2
4 PLACES
MOUNTING BOLT DETAIL,
CONCRETE FOUNDATIONS TO SUPPORT
AWPAG WINDSHIELD ASSEMBLY

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
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CARGO APRON AND ACCESS

ASOS DETAILS (4 OF 4)

SCALE: NTS | DATE: MARCH 2022

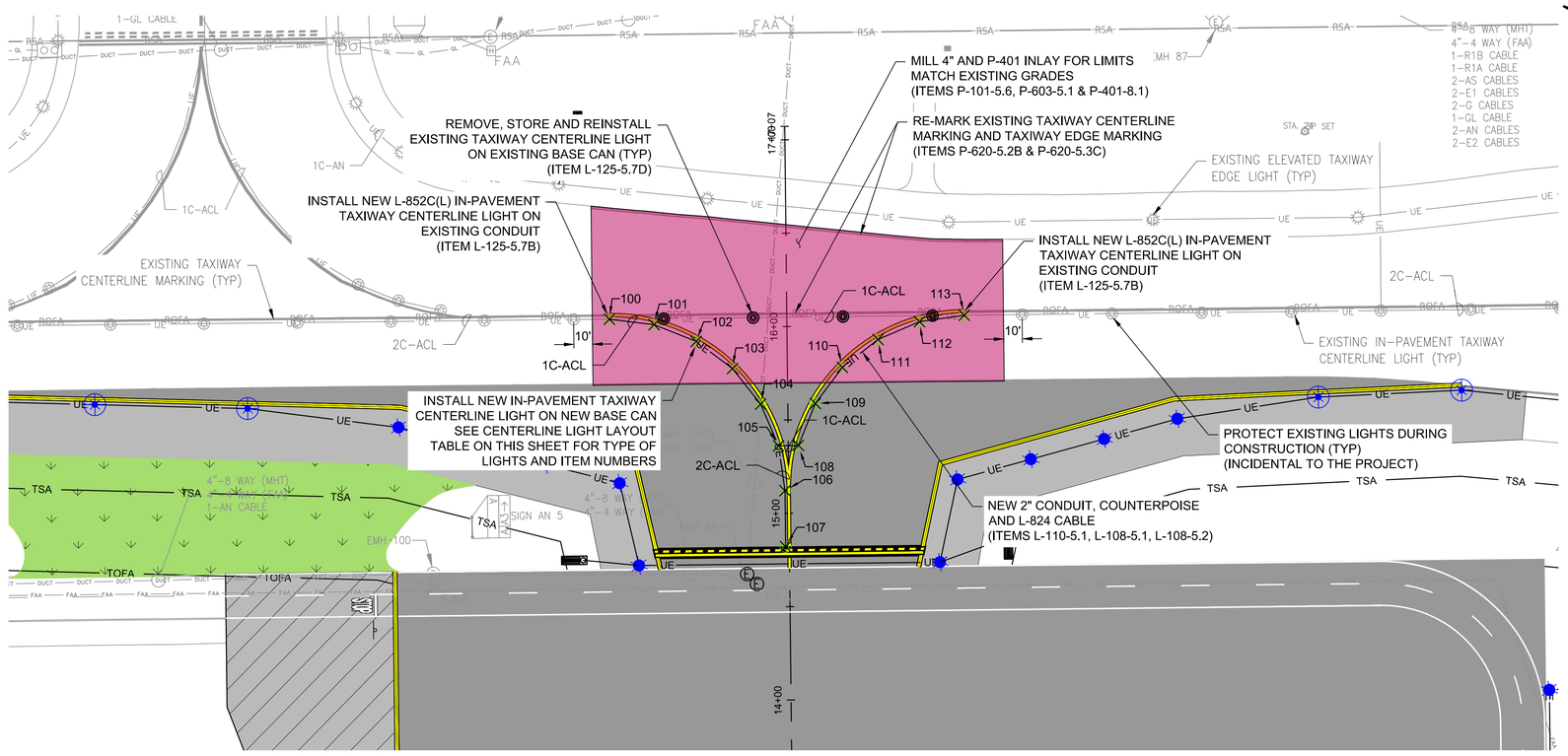
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

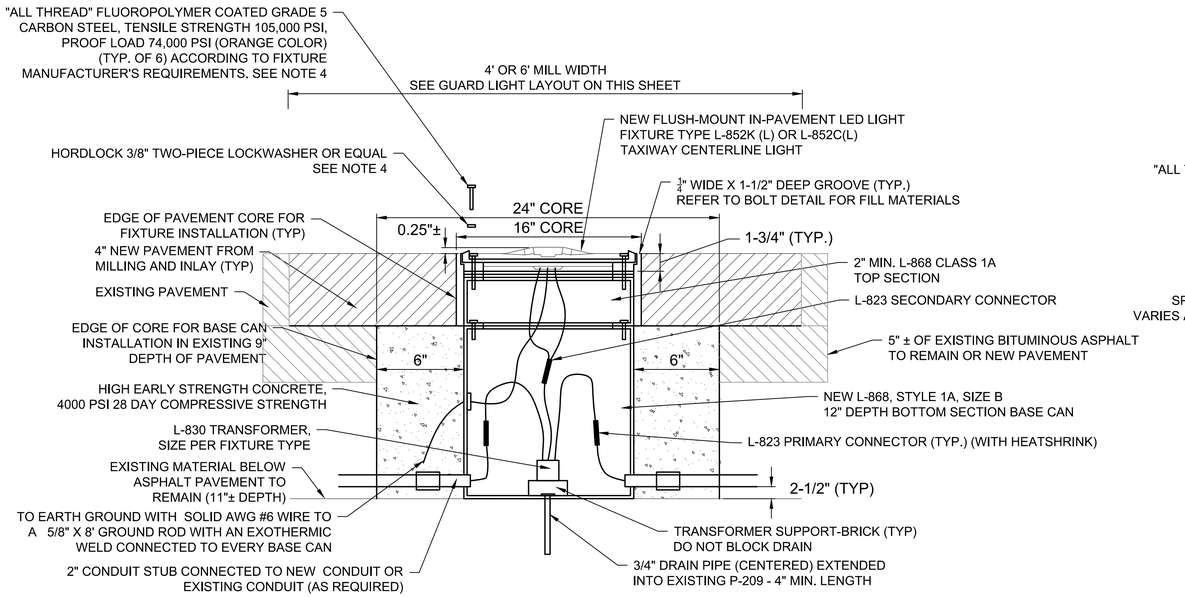
DRAWING NO.
AS-05

SHEET 61 OF 90 REV



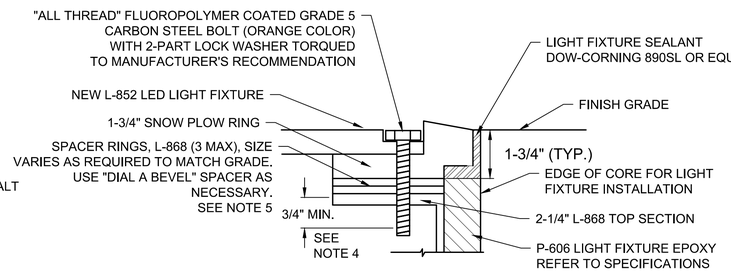
CENTERLINE LIGHT LAYOUT TABLE				
Point #	Northing	Easting	ITEM NO.	FIXTURE TYPE
100	157351.0950	1046252.7478	L-125-5.7B	L-852C(L)
101	157327.9299	1046259.4764	L-125-5.7C	L-852K(L)
102	157303.6775	1046259.9957	L-125-5.7C	L-852K(L)
103	157280.0958	1046254.2233	L-125-5.7C	L-852K(L)
104	157258.8117	1046242.5442	L-125-5.7C	L-852K(L)
105	157241.2755	1046225.7544	L-125-5.7C	L-852K(L)
106	157228.6825	1046204.9979	L-125-5.7A	L-852C(L)
107	157216.6547	1046177.5146	L-125-5.7A	L-852C(L)
108	157231.5202	1046230.1413	L-125-5.7C	L-852K(L)
109	157231.9998	1046254.3301	L-125-5.7C	L-852K(L)
110	157226.2026	1046277.8188	L-125-5.7C	L-852K(L)
111	157214.5236	1046299.0067	L-125-5.7C	L-852K(L)
112	157197.7587	1046316.4499	L-125-5.7C	L-852K(L)
113	157177.0505	1046328.9597	L-125-5.7B	L-852C(L)

0 40 80 120 FT
SCALE

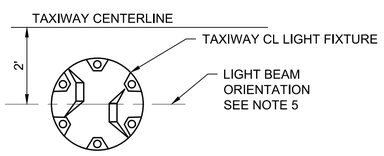


LIGHT DETAIL NOTES:
1. REFER TO SHEET FOR LIGHT FIXTURE LAYOUT LOCATION.
2. LIGHT BASES SHALL BE INSTALLED WITH CARE TO ASSURE VERTICAL & AZIMUTH ALIGNMENT OF FIXTURE.
3. PROVIDE 2'-3' CABLE SLACK WITHIN LIGHT BASE TO ALLOW TRANSFORMER SERVICING.
4. BOLTS AND WASHERS USED DURING INSTALLATION OF BASE, CABLE, AND TRANSFORMERS SHALL BE REPLACED WITH NEW, FOR FINAL INSTALLATION. MINIMUM THREAD EMPLACEMENT BEYOND BOTTOM OF FLANGE OF BASE IS 3/4". MAXIMUM LENGTH OF BOLT TO BE 3-1/2".
5. LIGHT BEAM ORIENTATION FOR IN-PAVEMENT TAXIWAY CENTERLINE LIGHTS ON A CURVE SHALL BE INSTALLED SO THE BEAM IS TANGENT TO THE NEAREST POINT OF THE CURVE DESIGNATED AS THE CENTERLINE OF THE PATH.
6. SNOW PLOW RINGS STYLE 2 (1-3/4") SHALL BE BI-DIRECTIONAL FOR TAXIWAY CENTERLINE LIGHTS.

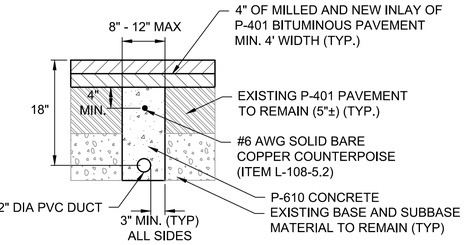
IN-PAVEMENT L-852K(L) OR L-852C(L) TW CL LIGHT INSTALLATION
NOT TO SCALE
(ITEM L-125-5.7A, L-125-5.7B & L-125-5.7C)



BOLT DETAIL
NOT TO SCALE



TW CL LIGHT ORIENATION
NOT TO SCALE



CONCRETE ENCASED ELECTRICAL CONDUIT: 1-WAY, 2-INCH
NOT TO SCALE
(ITEM L-110-5.1)

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MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CENTERLINE LIGHT PLAN

SCALE: 1" = 40'
DATE: MARCH 2022

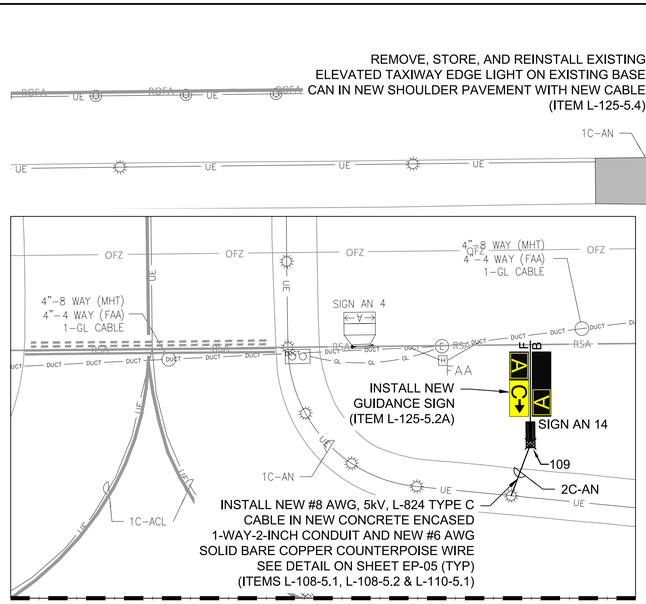
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
CL-01

SHEET 62 OF 90
REV



INSET A MATCH LINE

SCALE: 1" = 40'

REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT ON EXISTING BASE CAN IN NEW SHOULDER PAVEMENT WITH NEW CABLE (ITEM L-125-5.4)

INSTALL RELOCATED ELEVATED 14" TAXIWAY EDGE LIGHT ON NEW BASE CAN (TYP) SEE DETAIL ON SHEET EP-06 (ITEM L-125-5.5)

MATCH LINE (SEE INSET A THIS SHEET)

INSTALL NEW IN-PAVEMENT TAXIWAY CENTERLINE LIGHTS SEE SHEET CL-01

INSTALL NEW ELEVATED 20" TAXIWAY EDGE LIGHT (TYP) SEE DETAIL ON SHEET EP-06 (ITEM L-125-5.1)

TAXIWAY 'A'

TSA

INSTALL NEW #8 AWG, 5kV, L-824 TYPE C CABLE IN NEW CONCRETE ENCASED 1-WAY-2-INCH CONDUIT AND NEW #6 AWG SOLID BARE COPPER COUNTERPOISE WIRE SEE DETAIL ON SHEET EP-05 (TYP) (ITEMS L-108-5.1 & L-108-5.2)

INSTALL NEW #8 AWG, 5kV, L-824 TYPE C CABLE IN NEW CONCRETE ENCASED 1-WAY-2-INCH CONDUIT AND NEW #6 AWG SOLID BARE COPPER COUNTERPOISE WIRE SEE DETAIL ON SHEET EP-05 (TYP) (ITEMS L-108-5.1, L-108-5.2 & L-110-5.1)

SIGN AN 5

SIGN AN 15

INSTALL NEW AIRFIELD GUIDANCE SIGN SEE SIGN SCHEDULE ON SHEET EP-08

INSTALL NEW AIRCRAFT RATED ELECTRIC MANHOLES (TYP) (ITEM L-115-5.1)

TOFA

COORDINATE NEW DUCT CROSSING WITH EXISTING DUCT BANKS AND MAINTAIN MIN. 18" COVER

CONNECT NEW CONDUITS TO EXISTING ELECTRIC MANHOLE USING CORES INTO EXISTING MANHOLE FOR (2) 4" PVC CONDUITS AND "LINKSEAL" BETWEEN THE CONDUIT AND CORE HOLE (CORES ARE TO BE INCIDENTAL TO CONDUIT COST)

ELECTRICAL LAYOUT TABLE		
POINT NO.	NORTHING	EASTING
100	157709.398	1046054.74
101	157662.881	1046073.07
102	157586.779	1046103.07
103	157510.676	1046133.06
104	157432.337	1046155.34
105	157392.131	1046161.60
106	157351.925	1046167.86
107	157311.698	1046174.12
108	157284.936	1046137.60
109	157405.605	1046337.93
110	157203.949	1045662.19
111	157023.545	1045741.24

INSTALL (2) 4" FIBER CONDUIT FOR FUTURE USE PULL STRINGS ONLY (ITEM M-400-5.4C)

INSTALL NEW MAST LIGHT ON FOUNDATION INSTALLED BY OTHERS (ITEM M-400-5.5)

INSTALL CABLES IN (3) 1" CONDUITS INSTALLED BY OTHERS. (MAST LIGHT POWER, CAMERA POWER, AND CAMERA DATA). SEE NOTES 11.2, 11.3 AND 11.4 FOR RESPECTIVE CABLING (ITEMS M-400-5.1A, M-400-5.1C, M-400-5.1D, M-400-5.1E & M-400-5.2B)

INSTALL SECURITY CAMERA MOUNTED ON BUILDING AT 10' AFG (ITEMS M-400-5.6B & M-400-5.6D)

INSTALL (1) 1" CONDUIT BETWEEN PoE SWITCH AND SECURITY CAMERAS WITH OUTSIDE PLANT/SHIELDED CAT 6 CABLE (ITEMS M-400-5.2C & M-400-5.4E)

INSTALL 4-PORT PoE OUTDOOR HARDENED SWITCH (WITHIN 250' OF SECURITY CAMERAS) CONFIRM EXACT LOCATION AND MOUNTING ON EXTERIOR WITH MHT AND RPR (ITEM M-400-5.6C)

INSTALL NEW FIBER HANDHOLE (TYP) (ITEM M-400-5.7C)

INSTALL NEW MAST FOUNDATION AND LIGHT WITH MHT SECURITY CAMERA MOUNTED AT 25' AFG (ITEMS M-400-5.5, M-400-5.6A & M-400-5.7E)

INSTALL NEW 7'x13' ELECTRIC MANHOLE (TYP) SEE DETAIL ON SHEET EP-07 (ITEM M-400-5.7B)

NEW CABLE IN EXISTING CONDUIT BY EVERSOURCE (M-400-5.8B)

INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE (34.5kV PRI CABLE BY EVERSOURCE) (ITEMS M-400-5.4A & M-400-5.8B)

INSTALL NEW MHT SECURITY CAMERA MOUNTED ON SNOWMELTER HUT (ITEMS M-400-5.6B & M-400-5.6D)

INSTALL NEW SNOWMELTER SYSTEM ELECTRIC AND FIBER HUT WITH FIBER PANELS AND ELECTRIC PANEL FOR SNOWMELTER (ITEM M-400-5.3B)

INSTALL NEW TRANSFORMER FOR SNOWMELTER SYSTEM. 500kVA, 34.5kV PRI/480V SEC PAD MOUNT TRANSFORMER AND PAD. SEE SHEET EP-07 FOR PAD DETAIL (TRANSFORMER PROVIDED BY EVERSOURCE) (ITEMS M-400-5.7A & M-400-5.8A)

INSTALL (2) 4" FIBER CONDUITS WITH (1) 144 STRAND FIBER CABLE WITH INTERDUCT AND PULL STRING IN THE SPARE CONDUIT (ITEMS M-400-5.2A & M-400-5.4C)

INSTALL (2) 3" SNOWMELTER POWER CONDUITS (ITEM M-400-5.4D)

INSTALL (2) 3" FIBER CONDUIT FOR FUTURE USE, PULL STRINGS ONLY (ITEM M-400-5.4D)

INSTALL 144 STRAND FIBER CABLE AND INTERDUCT USING PULL STRING IN ONE OF THE (2) 4" CONDUITS INSTALLED BY OTHERS MOUNTED INSIDE BUIDING

MATCH LINE (SEE SHEET EP-03A)

MATCH LINE (SEE SHEET EP-02)

NOTES:

1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEETS EP-05 AND EP-06 FOR ELECTRICAL DETAILS.
3. SEE SHEET GE-01 TO GE-04B FOR GEOMETRY LAYOUT PLANS.
4. SEE SHEET CS-00 TO CS-08 FOR SAFETY AND PHASING PLANS.
5. CONTRACTOR TO CONFIRM EXISTING ELECTRICAL LAYOUT PRIOR TO STARTING WORK.
6. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES NOT SCHEDULED FOR REMOVAL.
7. FOR ADJUSTED RIM ELEVATIONS SEE GRADING, DRAINAGE, AND EROSION CONTROL PLANS ON SHEET GR-01 TO GR-04B.
8. ALL WIRE INSTALLED TO TAXIWAY EDGE LIGHTS SHALL BE NO. 8 5kV IN CONDUIT UNLESS OTHERWISE NOTED.
9. ALL NEW CONDUIT INSTALLED UNDER TAXIWAY PAVEMENT SHALL BE CONCRETE ENCASED (ITEM L-110-5.1).
10. LAYOUT OF ALL ELECTRICAL ITEMS SHALL BE APPROVED BY RPR AND/OR EVERSOURCE PRIOR TO INSTALLATION.
11. HIGH MAST AND SECURITY CAMERA FEEDS:
    - 11.1. INSTALL (2) NEW MHT FIBER SYSTEM PATCH PANEL (12 STRAND) IN DEMARC ROOM WITH CONNECTION TO MHT SECURITY CAMERAS ON POLES AND BUILDING. INSTALL NEW MHT 120/208V POWER PANEL, TIME CLOCK AND PHOTOCELL PROVIDED BY OTHERS.
    - 11.2. (1) 1" CONDUIT FOR POE HARDENED SWITCHES SHALL COME FROM MHT 120V PANEL IN ELECTRIC ROOM AND WILL BE MOUNTED INSIDE THE BUILDING. FEED CAMERA POWER WITH (2) #12, #10G FROM A 20A CIRCUIT BREAKER.
    - 11.3. INSTALL 2-STRAND FIBER OPTIC CABLE FROM DEMARC ROOM TO EACH POE HARDENED SWITCH FOR CAMERA DATA TRANSMISSION MOUNTED INSIDE THE BUILDING IN (1) 1" CONDUIT INSTALLED BY OTHERS.
    - 11.4. (2) MAST LIGHT CIRCUITS (2-POLES PER CIRCUIT): 1" CONDUITS SHALL COME FROM MHT 208V PANEL IN ELECTRIC ROOM. ONE OF THESE CIRCUITS WILL BE MOUNTED INSIDE THE BUILDING, AND ONE SHALL BE INSTALLED UNDERGROUND OUTSIDE OF THE ELECTRIC ROOM AND CONCRETE ENCASED. FEED FROM 20A CIRCUIT BREAKERS VIA TIME CLOCK AND PHOTOCELL.
      - (3) #10, #8G FOR 2 SOUTHERNMOST HIGH MAST LIGHT POLES USING UNDERGROUND 1" CONDUIT
      - (3) #6, #8G FOR 2 NORTHERNMOST HIGH MAST LIGHT POLES USING INSIDE BUILDING 1" CONDUIT
12. SNOWMELTER BUILDING CAMERA FEEDS:
    - 12.1. INSTALL (2) NEW MHT FIBER SYSTEM PATCH PANELS (12 STRAND) IN SNOWMELTER BUILDING WITH CONNECTION TO MHT SECURITY CAMERA ON BUILDING. CAMERA POWER TO BE PART OF THE FINAL DESIGN FOR SNOWMELTER BUILDING. FOR MHT FIBER SYSTEM, PROVIDE A MINIMUM OF 100' OF SLACK CABLE COILED IN THE BUILDING.

LEGEND

- UE — NO. 8 5kV L-824 CABLE AND CONDUIT
- GUIDANCE SIGN
- NEW ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
- RE-INSTALL STORED ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
- REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT
- AIRCRAFT RATED ELECTRIC MANHOLE
- UFO — FIBER OPTIC CONDUIT
- E — ELECTRIC CONDUIT
- UDT — CAT 6 CABLE
- E — 7' x 13' ELECTRIC MANHOLE
- E — ELECTRIC HANDHOLE
- F — FIBER HANDHOLE
- HIGH MAST LIGHT POLE
- MHT SECURITY CAMERA
- 4-PORT PoE OUTDOOR HARDENED SWITCH
- UTILITY POLE INSTALLED BY OTHERS
- OH E — OVERHEAD ELECTRIC WIRE INSTALLED BY OTHERS
- CONCRETE ENCASEMENT
- F — FRONT OF SIGN
- B — BACK OF SIGN
- 1C-AN — CIRCUIT / NUMBER OF CONDUCTORS

0 40 80 120 FT

SCALE

ENGINEER'S SEAL

THE STATE OF NEW HAMPSHIRE — BRIAN M. BYRNE — No. 7416 — LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER

McFarland Johnson

53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL PLAN – BASE BID

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

FILE NAME:

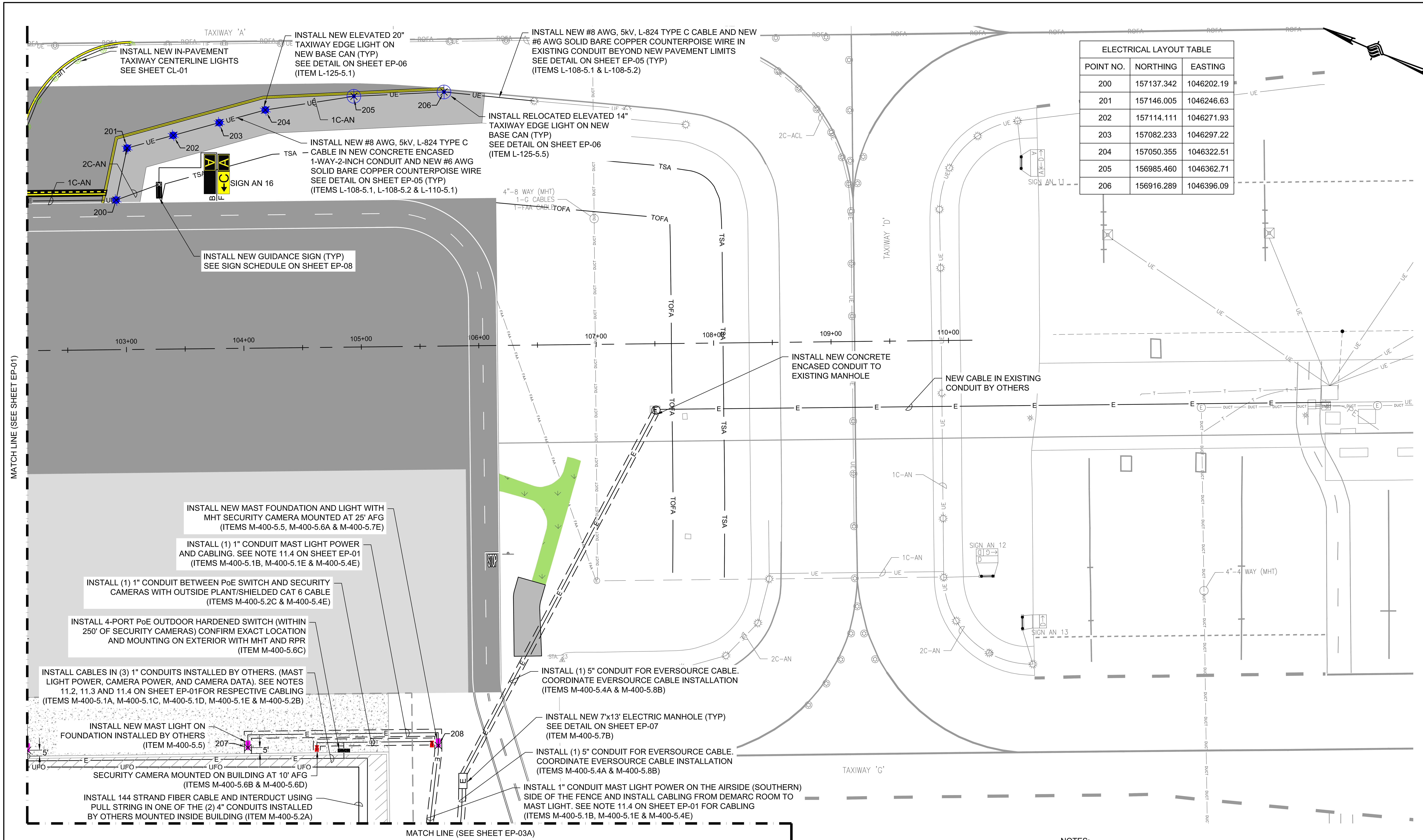
AIP No.: 3–33–0011–XXX–2021

DRAWING NO.

EP–01

SHEET 63 OF 90

REV



TAXIWAY 'A'
INSTALL NEW IN-PAVEMENT TAXIWAY CENTERLINE LIGHTS SEE SHEET CL-01
INSTALL NEW ELEVATED 20" TAXIWAY EDGE LIGHT ON NEW BASE CAN (TYP) SEE DETAIL ON SHEET EP-06 (ITEM L-125-5.1)
INSTALL NEW #8 AWG, 5kV, L-824 TYPE C CABLE AND NEW #6 AWG SOLID BARE COPPER COUNTERPOISE WIRE IN EXISTING CONDUIT BEYOND NEW PAVEMENT LIMITS SEE DETAIL ON SHEET EP-05 (TYP) (ITEMS L-108-5.1 & L-108-5.2)
INSTALL RELOCATED ELEVATED 14" TAXIWAY EDGE LIGHT ON NEW BASE CAN (TYP) SEE DETAIL ON SHEET EP-06 (ITEM L-125-5.5)
INSTALL NEW #8 AWG, 5kV, L-824 TYPE C CABLE IN NEW CONCRETE ENCASED 1-WAY-2-INCH CONDUIT AND NEW #6 AWG SOLID BARE COPPER COUNTERPOISE WIRE SEE DETAIL ON SHEET EP-05 (TYP) (ITEMS L-108-5.1, L-108-5.2 & L-110-5.1)
200
201
202
203
204
205
206
1C-AN
2C-AN
SIGN AN 16
TSA
TOFA
4"-8 WAY (MHT) 1-G CABLES 1-FAA CABLE
INSTALL NEW GUIDANCE SIGN (TYP) SEE SIGN SCHEDULE ON SHEET EP-08
2C-ACL
TAXIWAY 'D'
SIGN AN 11
SIGN AN 12
SIGN AN 13
103+00
104+00
105+00
106+00
107+00
108+00
109+00
110+00
INSTALL NEW CONCRETE ENCASED CONDUIT TO EXISTING MANHOLE
NEW CABLE IN EXISTING CONDUIT BY OTHERS
MATCH LINE (SEE SHEET EP-01)
INSTALL NEW MAST FOUNDATION AND LIGHT WITH MHT SECURITY CAMERA MOUNTED AT 25' AFG (ITEMS M-400-5.5, M-400-5.6A & M-400-5.7E)
INSTALL (1) 1" CONDUIT MAST LIGHT POWER AND CABLING. SEE NOTE 11.4 ON SHEET EP-01 (ITEMS M-400-5.1B, M-400-5.1E & M-400-5.4E)
INSTALL (1) 1" CONDUIT BETWEEN PoE SWITCH AND SECURITY CAMERAS WITH OUTSIDE PLANT/SHIELDED CAT 6 CABLE (ITEMS M-400-5.2C & M-400-5.4E)
INSTALL 4-PORT PoE OUTDOOR HARDENED SWITCH (WITHIN 250' OF SECURITY CAMERAS) CONFIRM EXACT LOCATION AND MOUNTING ON EXTERIOR WITH MHT AND RPR (ITEM M-400-5.6C)
INSTALL CABLES IN (3) 1" CONDUITS INSTALLED BY OTHERS. (MAST LIGHT POWER, CAMERA POWER, AND CAMERA DATA). SEE NOTES 11.2, 11.3 AND 11.4 ON SHEET EP-01FOR RESPECTIVE CABLING (ITEMS M-400-5.1A, M-400-5.1C, M-400-5.1D, M-400-5.1E & M-400-5.2B)
INSTALL NEW MAST LIGHT ON FOUNDATION INSTALLED BY OTHERS (ITEM M-400-5.5)
207
208
SECURITY CAMERA MOUNTED ON BUILDING AT 10' AFG (ITEMS M-400-5.6B & M-400-5.6D)
INSTALL 144 STRAND FIBER CABLE AND INTERDUCT USING PULL STRING IN ONE OF THE (2) 4" CONDUITS INSTALLED BY OTHERS MOUNTED INSIDE BUILDING (ITEM M-400-5.2A)
INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4A & M-400-5.8B)
INSTALL NEW 7'x13' ELECTRIC MANHOLE (TYP) SEE DETAIL ON SHEET EP-07 (ITEM M-400-5.7B)
INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4A & M-400-5.8B)
INSTALL 1" CONDUIT MAST LIGHT POWER ON THE AIRSIDE (SOUTHERN) SIDE OF THE FENCE AND INSTALL CABLING FROM DEMARC ROOM TO MAST LIGHT. SEE NOTE 11.4 ON SHEET EP-01 FOR CABLING (ITEMS M-400-5.1B, M-400-5.1E & M-400-5.4E)
TAXIWAY 'G'
4"-4 WAY (MHT)
MATCH LINE (SEE SHEET EP-03A)

ELECTRICAL LAYOUT TABLE

POINT NO.	NORTHING	EASTING
200	157137.342	1046202.19
201	157146.005	1046246.63
202	157114.111	1046271.93
203	157082.233	1046297.22
204	157050.355	1046322.51
205	156985.460	1046362.71
206	156916.289	1046396.09

LEGEND

Symbol	Description
UE	NO. 8 5kV L-824 CABLE AND CONDUIT
	GUIDANCE SIGN
	NEW ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
	RE-INSTALL STORED ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
	REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT
E	AIRCRAFT RATED ELECTRIC MANHOLE
UFO	FIBER OPTIC CONDUIT
E	ELECTRIC CONDUIT
UDT	CAT 6 CABLE
E	7' x 13' ELECTRIC MANHOLE
E	ELECTRIC HANDHOLE
F	FIBER HANDHOLE
	HIGH MAST LIGHT POLE
	MHT SECURITY CAMERA
	4-PORT PoE OUTDOOR HARDENED SWITCH
	UTILITY POLE INSTALLED BY OTHERS
OH E	OVERHEAD ELECTRIC WIRE INSTALLED BY OTHERS
	CONCRETE ENCASEMENT

F — FRONT OF SIGN
B — BACK OF SIGN

1C-AN — CIRCUIT — NUMBER OF CONDUCTORS

NOTES:
1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET EP-01 FOR ELECTRICAL NOTES.

SCALE: 0 40 80 120 FT

ENGINEER'S SEAL
STATE OF NEW HAMPSHIRE — BRIAN M. BARRETT — No. 7416 — LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER

McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL PLAN – BASE BID

SCALE: 1" = 40'
DATE: MARCH 2022

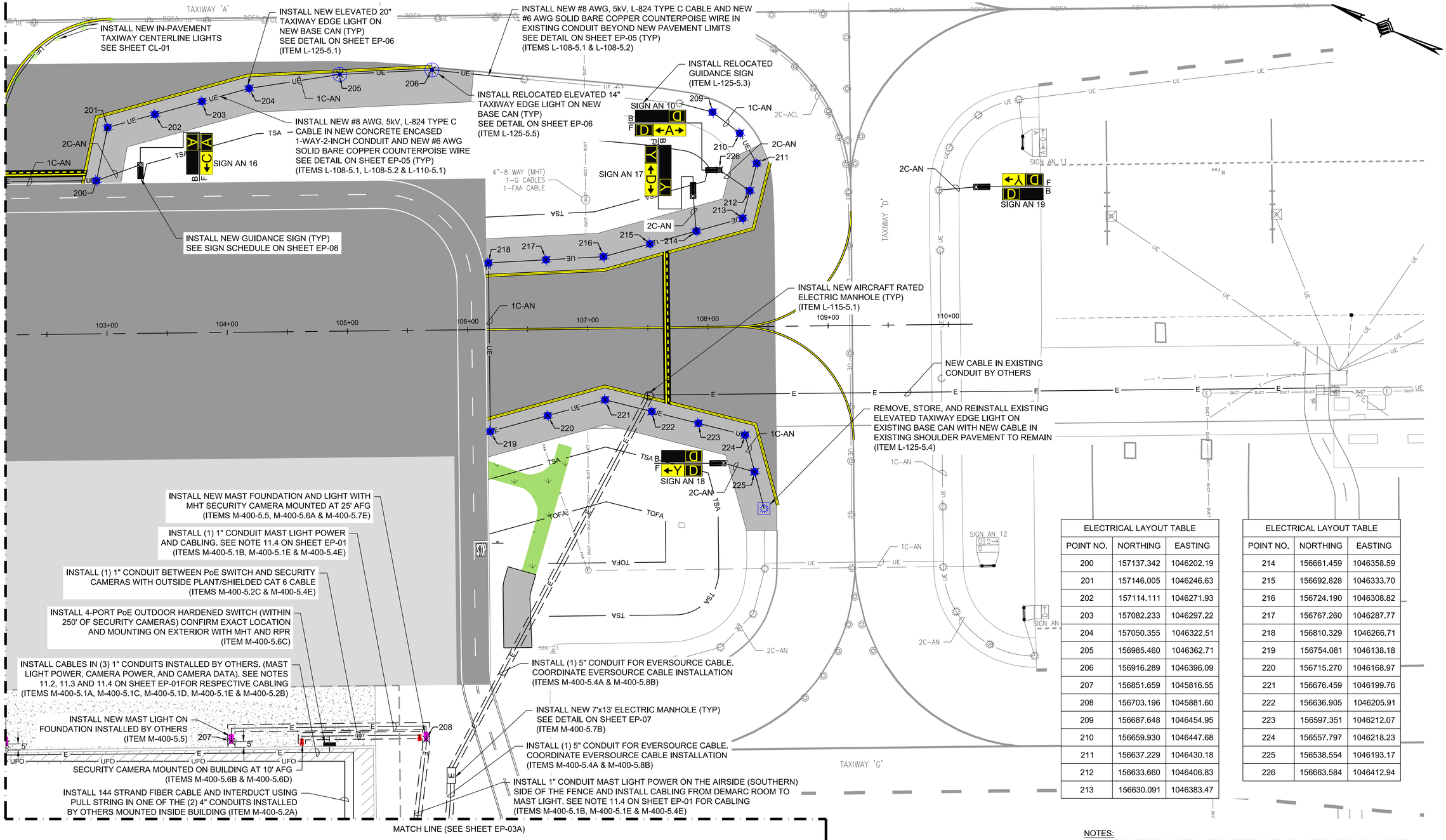
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-02

REV



ELECTRICAL LAYOUT TABLE		
POINT NO.	NORTHING	EASTING
200	157137.342	1046202.19
201	157146.005	1046246.63
202	157114.111	1046271.93
203	157082.233	1046297.22
204	157050.355	1046322.51
205	156985.460	1046362.71
206	156916.289	1046396.09
207	156851.659	1045816.55
208	156703.196	1045881.60
209	156687.648	1046454.95
210	156659.930	1046447.68
211	156637.229	1046430.18
212	156633.660	1046406.83
213	156630.091	1046383.47

ELECTRICAL LAYOUT TABLE		
POINT NO.	NORTHING	EASTING
214	156661.459	1046358.59
215	156692.828	1046333.70
216	156724.190	1046308.82
217	156767.260	1046287.77
218	156810.329	1046266.71
219	156754.081	1046138.18
220	156715.270	1046168.97
221	156676.459	1046199.76
222	156636.905	1046205.91
223	156597.351	1046212.07
224	156557.797	1046218.23
225	156538.554	1046193.17
226	156663.584	1046412.94

LEGEND

- UE — NO. 8 5kV L-824 CABLE AND CONDUIT
- GUIDANCE SIGN
- NEW ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
- RE-INSTALL STORED ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
- REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT
- AIRCRAFT RATED ELECTRIC MANHOLE
- UFO — FIBER OPTIC CONDUIT
- E — ELECTRIC CONDUIT
- UDT — CAT 6 CABLE
- E — 7' x 13' ELECTRIC MANHOLE
- E — ELECTRIC HANDHOLE
- F — FIBER HANDHOLE
- HIGH MAST LIGHT POLE
- MHT SECURITY CAMERA
- 4-PORT PoE OUTDOOR HARDENED SWITCH
- UTILITY POLE INSTALLED BY OTHERS
- OH E — OVERHEAD ELECTRIC WIRE INSTALLED BY OTHERS
- CONCRETE ENCASEMENT
- F — FRONT OF SIGN
- B — BACK OF SIGN
- 1C-AN — CIRCUIT / NUMBER OF CONDUCTORS

NOTES:
1. THIS SHEET SHALL REPLACE SHEET EP-02 IF ADD ALTERNATE 4 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE TAXIWAY D TAXILANE CONNECTOR SHALL BE PAID FOR AS PART OF ADD ALTERNATE 4. ALL OTHER WORK SHOWN SHALL BE PAID FOR AS PART OF THE BASE BID.
3. SEE SHEET EP-01 FOR ELECTRICAL NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. MCKNIGHT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL PLAN – ADD ALT 4

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

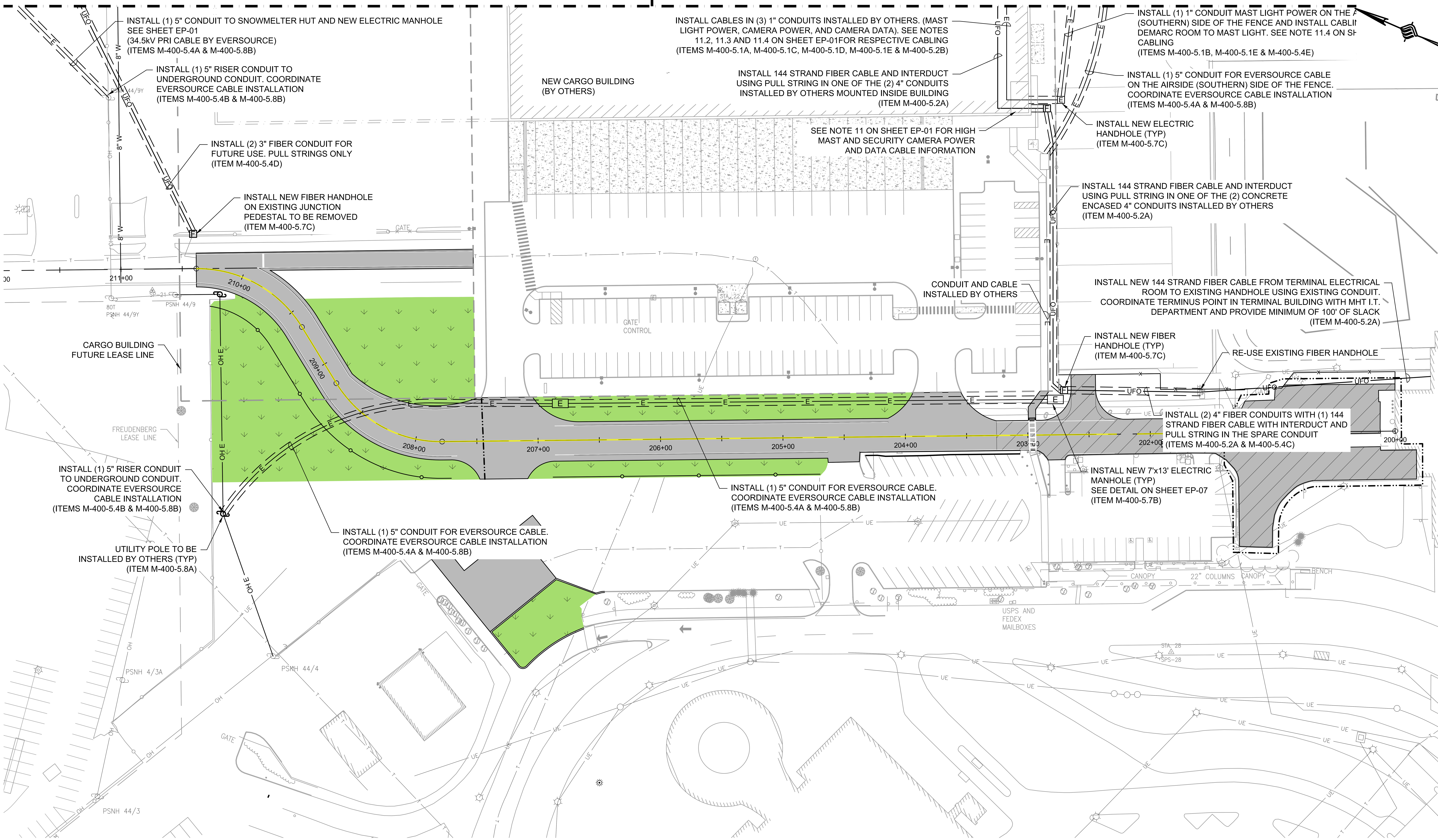
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-02A

SHEET 65 OF 90
REV

MATCH LINE (SEE SHEET EP-01)

MATCH LINE (SEE SHEET EP-02)



INSTALL (1) 5" CONDUIT TO SNOWMELTER HUT AND NEW ELECTRIC MANHOLE SEE SHEET EP-01 (34.5kV PRI CABLE BY EVERSOURCE) (ITEMS M-400-5.4A & M-400-5.8B)
INSTALL (1) 5" RISER CONDUIT TO UNDERGROUND CONDUIT. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4B & M-400-5.8B)
INSTALL (2) 3" FIBER CONDUIT FOR FUTURE USE. PULL STRINGS ONLY (ITEM M-400-5.4D)
INSTALL NEW FIBER HANDHOLE ON EXISTING JUNCTION PEDESTAL TO BE REMOVED (ITEM M-400-5.7C)
NEW CARGO BUILDING (BY OTHERS)
INSTALL CABLES IN (3) 1" CONDUITS INSTALLED BY OTHERS. (MAST LIGHT POWER, CAMERA POWER, AND CAMERA DATA). SEE NOTES 11.2, 11.3 AND 11.4 ON SHEET EP-01FOR RESPECTIVE CABLING (ITEMS M-400-5.1A, M-400-5.1C, M-400-5.1D, M-400-5.1E & M-400-5.2B)
INSTALL 144 STRAND FIBER CABLE AND INTERDUCT USING PULL STRING IN ONE OF THE (2) 4" CONDUITS INSTALLED BY OTHERS MOUNTED INSIDE BUILDING (ITEM M-400-5.2A)
SEE NOTE 11 ON SHEET EP-01 FOR HIGH MAST AND SECURITY CAMERA POWER AND DATA CABLE INFORMATION
INSTALL (1) 1" CONDUIT MAST LIGHT POWER ON THE (SOUTHERN) SIDE OF THE FENCE AND INSTALL CABLI DEMARC ROOM TO MAST LIGHT. SEE NOTE 11.4 ON SH CABLING (ITEMS M-400-5.1B, M-400-5.1E & M-400-5.4E)
INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE ON THE AIRSIDE (SOUTHERN) SIDE OF THE FENCE. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4A & M-400-5.8B)
INSTALL NEW ELECTRIC HANDHOLE (TYP) (ITEM M-400-5.7C)
INSTALL 144 STRAND FIBER CABLE AND INTERDUCT USING PULL STRING IN ONE OF THE (2) CONCRETE ENCASED 4" CONDUITS INSTALLED BY OTHERS (ITEM M-400-5.2A)
CONDUIT AND CABLE INSTALLED BY OTHERS
INSTALL NEW 144 STRAND FIBER CABLE FROM TERMINAL ELECTRICAL ROOM TO EXISTING HANDHOLE USING EXISTING CONDUIT. COORDINATE TERMINUS POINT IN TERMINAL BUILDING WITH MHT I.T. DEPARTMENT AND PROVIDE MINIMUM OF 100' OF SLACK (ITEM M-400-5.2A)
INSTALL NEW FIBER HANDHOLE (TYP) (ITEM M-400-5.7C)
RE-USE EXISTING FIBER HANDHOLE
INSTALL (2) 4" FIBER CONDUITS WITH (1) 144 STRAND FIBER CABLE WITH INTERDUCT AND PULL STRING IN THE SPARE CONDUIT (ITEMS M-400-5.2A & M-400-5.4C)
INSTALL NEW 7'x13' ELECTRIC MANHOLE (TYP) SEE DETAIL ON SHEET EP-07 (ITEM M-400-5.7B)
INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4A & M-400-5.8B)
CARGO BUILDING FUTURE LEASE LINE
FREUDENBERG LEASE LINE
INSTALL (1) 5" RISER CONDUIT TO UNDERGROUND CONDUIT. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4B & M-400-5.8B)
INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE. COORDINATE EVERSOURCE CABLE INSTALLATION (ITEMS M-400-5.4A & M-400-5.8B)
UTILITY POLE TO BE INSTALLED BY OTHERS (TYP) (ITEM M-400-5.8A)
GATE CONTROL
CANOPY
22" COLUMNS
BENCH
USPS AND FEDEX MAILBOXES
PSNH 44/9
PSNH 44/4
PSNH 4/3A
PSNH 44/3
211+00
210+00
209+00
208+00
207+00
206+00
205+00
204+00
203+00
202+00
200+00

LEGEND

—UE—	NO. 8 5kV L-824 CABLE AND CONDUIT
	GUIDANCE SIGN
	NEW ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
	RE-INSTALL STORED ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
	REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT
Ⓔ	AIRCRAFT RATED ELECTRIC MANHOLE
—UFO—	FIBER OPTIC CONDUIT
—E—	ELECTRIC CONDUIT
—UDT—	CAT 6 CABLE
E	7' x 13' ELECTRIC MANHOLE
E	ELECTRIC HANDHOLE
F	FIBER HANDHOLE
	HIGH MAST LIGHT POLE
	MHT SECURITY CAMERA
	4-PORT PoE OUTDOOR HARDENED SWITCH
	UTILITY POLE INSTALLED BY OTHERS
—OH E—	OVERHEAD ELECTRIC WIRE INSTALLED BY OTHERS
= = = =	CONCRETE ENCASEMENT

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 1 IS AWARDED.
2. SEE SHEET EP-01 FOR ELECTRICAL NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL

PROJECT DESIGNER

McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL PLAN - ALT 1

SCALE: 1" = 40'

DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-03A

SHEET 66 OF 90 REV

MATCH LINE (SEE SHEET EP-01)

MATCH LINE (SEE SHEET EP-02)

MATCH LINE (SEE INSET A ON SHEET EP-04B)

INSTALL (1) 5" CONDUIT TO SNOWMELTER HUT AND NEW ELECTRIC MANHOLE SEE SHEET EP-01
(34.5kV PRI CABLE BY EVERSOURCE)
(ITEMS M-400-5.4A & M-400-5.8B)

INSTALL (1) 5" RISER CONDUIT TO UNDERGROUND CONDUIT. COORDINATE EVERSOURCE CABLE INSTALLATION
(ITEMS M-400-5.4B & M-400-5.8B)

INSTALL (2) 3" FIBER CONDUIT FOR FUTURE USE. PULL STRINGS ONLY
(ITEM M-400-5.4D)

INSTALL NEW FIBER HANDHOLE ON EXISTING JUNCTION PEDESTAL TO BE REMOVED
(ITEM M-400-5.7C)

NEW CARGO BUILDING
(BY OTHERS)

INSTALL CABLES IN (3) 1" CONDUITS INSTALLED BY OTHERS. (MAST LIGHT POWER, CAMERA POWER, AND CAMERA DATA). SEE NOTES 11.2, 11.3 AND 11.4 ON SHEET EP-01FOR RESPECTIVE CABLING
(ITEMS M-400-5.1A, M-400-5.1C, M-400-5.1D, M-400-5.1E & M-400-5.2B)

INSTALL 144 STRAND FIBER CABLE AND INTERDUCT USING PULL STRING IN ONE OF THE (2) 4" CONDUITS INSTALLED BY OTHERS MOUNTED INSIDE BUILDING
(ITEM M-400-5.2A)

SEE NOTE 11 ON SHEET EP-01 FOR HIGH MAST AND SECURITY CAMERA POWER AND DATA CABLE INFORMATION

INSTALL (1) 1" CONDUIT MAST LIGHT POWER ON THE A
(SOUTHERN) SIDE OF THE FENCE AND INSTALL CABLII
DEMARC ROOM TO MAST LIGHT. SEE NOTE 11.4 ON SI
CABLING
(ITEMS M-400-5.1B, M-400-5.1E & M-400-5.4E)

INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE ON THE AIRSIDE (SOUTHERN) SIDE OF THE FENCE. COORDINATE EVERSOURCE CABLE INSTALLATION
(ITEMS M-400-5.4A & M-400-5.8B)

INSTALL NEW ELECTRIC HANDHOLE (TYP)
(ITEM M-400-5.7C)

INSTALL 144 STRAND FIBER CABLE AND INTERDUCT USING PULL STRING IN ONE OF THE (2) CONCRETE ENCASED 4" CONDUITS INSTALLED BY OTHERS
(ITEM M-400-5.2A)

CONDUIT AND CABLE INSTALLED BY OTHERS

INSTALL NEW 144 STRAND FIBER CABLE FROM TERMINAL ELECTRICAL ROOM TO EXISTING HANDHOLE USING EXISTING CONDUIT. COORDINATE TERMINUS POINT IN TERMINAL BUILDING WITH MHT I.T. DEPARTMENT AND PROVIDE MINIMUM OF 100' OF SLACK
(ITEM M-400-5.2A)

INSTALL NEW FIBER HANDHOLE (TYP)
(ITEM M-400-5.7C)

RE-USE EXISTING FIBER HANDHOLE

INSTALL (2) 4" FIBER CONDUITS WITH (1) 144 STRAND FIBER CABLE WITH INTERDUCT AND PULL STRING IN THE SPARE CONDUIT
(ITEMS M-400-5.2A & M-400-5.4C)

INSTALL NEW 7'x13' ELECTRIC MANHOLE (TYP)
SEE DETAIL ON SHEET EP-07
(ITEM M-400-5.7B)

CARGO BUILDING FUTURE LEASE LINE

FREUDENBERG LEASE LINE

INSTALL (1) 5" RISER CONDUIT TO UNDERGROUND CONDUIT. COORDINATE EVERSOURCE CABLE INSTALLATION
(ITEMS M-400-5.4B & M-400-5.8B)

UTILITY POLE TO BE INSTALLED BY OTHERS (TYP)
(ITEM M-400-5.8A)

INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE. COORDINATE EVERSOURCE CABLE INSTALLATION
(ITEMS M-400-5.4A & M-400-5.8B)

INSTALL (1) 5" CONDUIT FOR EVERSOURCE CABLE. COORDINATE EVERSOURCE CABLE INSTALLATION
(ITEMS M-400-5.4A & M-400-5.8B)

INSTALL NEW CABLE AND CONDUIT FROM OLD TICKET BOOTH LOCATION TO NEW LOCATION
(INCIDENTAL TO ITEM M-700-5.6)

MATCH LINE (SEE SHEET EP-04B)

208+00 207+00 206+00 205+00 204+00 203+00 202+00 200+00 209+00 210+00 211+00 212+00

GATE CONTROL

USPS AND FEDEX MAILBOXES

CANOPY 22" COLUMNS CANOPY BENCH

PSNH 44/9Y PSNH 44/9 PSNH 4/3A PSNH 44/4

STA. 28 SPS-28

LEGEND

UE — NO. 8 5kV L-824 CABLE AND CONDUIT	UFO — FIBER OPTIC CONDUIT
GUIDANCE SIGN	E — ELECTRIC CONDUIT
NEW ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN	UDT — CAT 6 CABLE
RE-INSTALL STORED ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN	E — 7' x 13' ELECTRIC MANHOLE
REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT	E — ELECTRIC HANDHOLE
E — AIRCRAFT RATED ELECTRIC MANHOLE	F — FIBER HANDHOLE

HIGH MAST LIGHT POLE	
MHT SECURITY CAMERA	
4-PORT PoE OUTDOOR HARDENED SWITCH	
UTILITY POLE INSTALLED BY OTHERS	
OH E — OVERHEAD ELECTRIC WIRE INSTALLED BY OTHERS	
CONCRETE ENCASEMENT	

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET EP-01 FOR ELECTRICAL NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BUTLER
No. 7410
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL PLAN – ALT 2

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-03B

SHEET 67 OF 90
REV

MATCH LINE (SEE SHEET EP-03B)

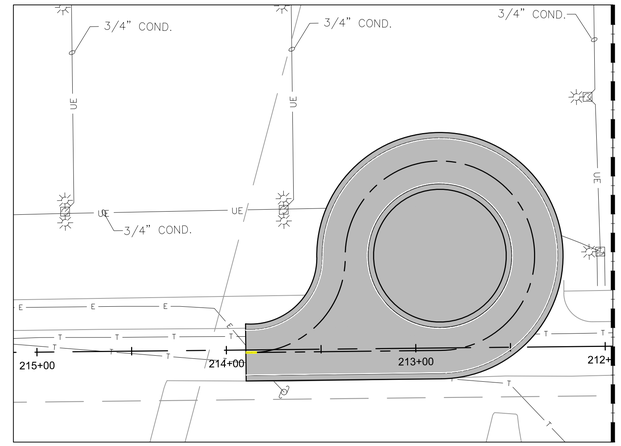
INSTALL RELOCATED WIFI POLE, OBSTRUCTION LIGHT, WIFI EQUIPMENT, AND PANEL BOARD. RECONNECT RELOCATED EQUIPMENT WITH 120V POWER AND FIBER FEEDER. RECONNECT OBSTRUCTION LIGHT WITH (2) #12 AWG & (1) #12 GROUND. COORDINATE RELOCATION WITH AIRPORT AND MHT IT DEPARTMENT SEE DETAILS ON SHEET EP-07 (ITEM M-400-5.10)

(1) 1" CONDUIT (POWER)
(1) 2" CONDUIT (COMMUNICATION)
(INCIDENTAL TO ITEM M-400-5.10)

CONNECT RELOCATED WIFI EQUIPMENT TO EXISTING 120V POWER FEED AND COMMUNICATIONS LEFT IN PLACE (INCIDENTAL TO ITEM M-400-5.10)

FREUDENBERG LEASE LINE

MANCHESTER LONDONDERRY



MATCH LINE (SEE SHEET EP-03B)

INSET A
SCALE: 1" = 40'

LEGEND

- UE — NO. 8 5kV L-824 CABLE AND CONDUIT
- GUIDANCE SIGN
- NEW ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
- RE-INSTALL STORED ELEVATED TAXIWAY EDGE LIGHT ON NEW BASE CAN
- REMOVE, STORE, AND REINSTALL EXISTING ELEVATED TAXIWAY EDGE LIGHT
- AIRCRAFT RATED ELECTRIC MANHOLE
- UFO — FIBER OPTIC CONDUIT
- E — ELECTRIC CONDUIT
- UDT — CAT 6 CABLE
- E — 7' x 13' ELECTRIC MANHOLE
- E — ELECTRIC HANDHOLE
- F — FIBER HANDHOLE
- HIGH MAST LIGHT POLE
- MHT SECURITY CAMERA
- 4-PORT PoE OUTDOOR HARDENED SWITCH
- UTILITY POLE INSTALLED BY OTHERS
- OH E — OVERHEAD ELECTRIC WIRE INSTALLED BY OTHERS
- CONCRETE ENCASEMENT

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET EP-01 FOR ELECTRICAL NOTES.

0 40 80 120 FT
SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL PLAN – ALT 2

SCALE: 1" = 40' | DATE: MARCH 2022

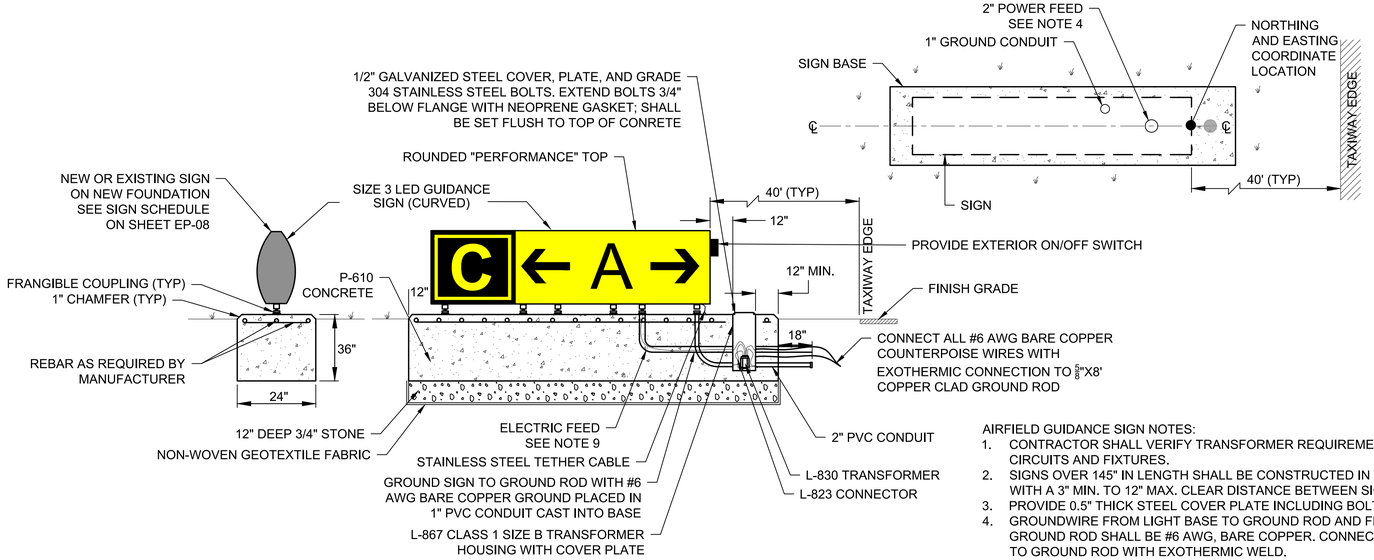
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-04B

SHEET 68 OF 90 REV



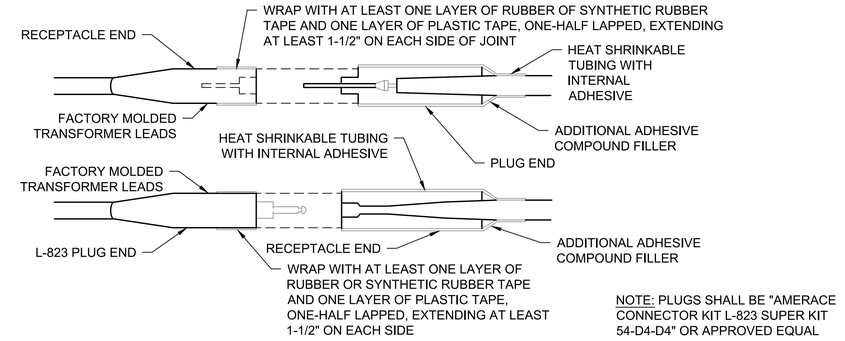
AIRFIELD GUIDANCE SIGN DETAIL

NOT TO SCALE

(ITEM L-125-5.2A, L-125-5.2B, L-125-5.3)

AIRFIELD GUIDANCE SIGN NOTES:

1. CONTRACTOR SHALL VERIFY TRANSFORMER REQUIREMENTS FOR ALL CIRCUITS AND FIXTURES.
2. SIGNS OVER 145" IN LENGTH SHALL BE CONSTRUCTED IN TWO SECTIONS, WITH A 3" MIN. TO 12" MAX. CLEAR DISTANCE BETWEEN SIGNS.
3. PROVIDE 0.5" THICK STEEL COVER PLATE INCLUDING BOLTS AND GASKET.
4. GROUNDWIRE FROM LIGHT BASE TO GROUND ROD AND FROM SIGN TO GROUND ROD SHALL BE #6 AWG, BARE COPPER. CONNECT GROUND WIRES TO GROUND ROD WITH EXOTHERMIC WELD.
5. SIGNS AND BASES SHALL BE SET LEVEL AND TRUE, ADJUST EXISTING GRADE SURROUNDING SIGN BASE AS REQUIRED 3% MAX. GRADE
6. FURNISH SIGN WITH L-830 ISOLATION TRANSFORMER, SIZE AS REQUIRED BY SIGN MANUFACTURER.
7. THE NUMBER OF MODULES SHOWN ON THE SIGN SCHEDULE (SHEET EP-08) WILL BE THE NUMBER OF MODULES PAID FOR REGARDLESS OF THE NUMBER OF MODULES REQUIRED BY THE MANUFACTURER.
8. PROVIDE HEAT SHRINK ON LINE SIDE OF PRIMARY CONNECTOR KITS ONLY. SECONDARY L-823 CONNECTIONS TO BE TAPED ONLY.
9. CONTRACTOR SHALL COORDINATE SIGN BASE LAYOUT FOR THE ELECTRICAL FEED AND SIGN SIZE WITH THE SIGN MANUFACTURER DURING THE SUBMITTAL PROCESS. SIGN BASE LAYOUT SHALL BE APPROVED PRIOR TO THE FABRICATION OF THE SIGN FOUNDATION.
10. PROVIDE ONE (1) TETHER FOR EACH MODULE OF THE SIGN.

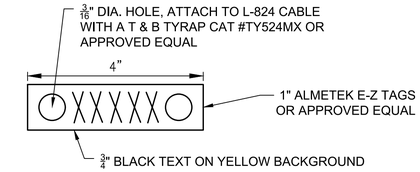


NOTE: PLUGS SHALL BE "AMERACE CONNECTOR KIT L-823 SUPER KIT 54-D4-D4" OR APPROVED EQUAL

L-823 CONNECTION

NOT TO SCALE

(INCIDENTAL TO OTHER ITEMS)



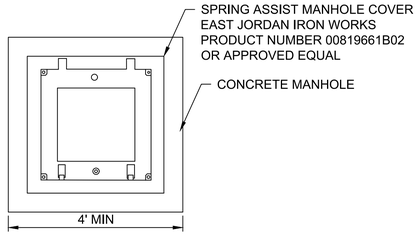
NOTES:

1. ALL L-824 CABLES SHALL BE IDENTIFIED WITH A TAG WITH ITS RESPECTIVE CIRCUIT/LOOP NUMBER AT ALL ACCESSIBLE LOCATIONS. ATTACH THE ID TAG 12" FROM THE L-823 CONNECTORS. THE LOOPS SHALL BE IDENTIFIED ON EACH SIDE OF THE CONNECTORS.

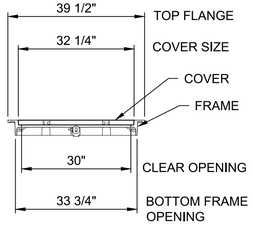
TYPICAL L-824 CABLE ID TAG

NOT TO SCALE

(INCIDENTAL TO ITEM L-108-5.1)



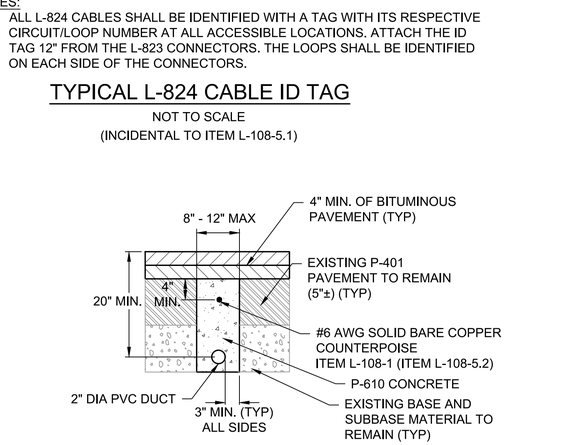
COVER - PLAN



COVER - SECTION

CAST IRON HATCH NOTES:

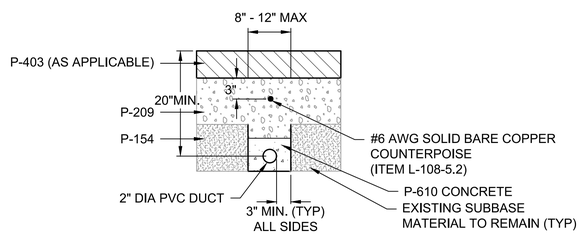
1. SHALL BE OF UNIFORM QUALITY, FREE FROM BLOW HOLES, SHRINKAGE, DISTORTION, DEFECTS, THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING.
2. SHALL CONFORM TO CLASS 30, GRAY CAST IRON, TO SPECIFICATIONS ASTM A536 AND AASHTO M306.
4. MANHOLE HATCHES SHALL BE CAPABLE OF SUPPORTING A 100,000 LB DUAL WHEEL LOADING, A CERTIFICATION OF COMPLIANCE SHALL BE SUBMITTED INDICATING THE FRAME AND COVER MEETS THE SPECIFIED LOADING.
5. MANHOLE COVER SHALL BE A LIFT ASSISTED HATCH STYLE (SPRING LOADED) AND HAVE A MINIMUM INSIDE OPENING OF 30" X 30" MANHOLE FRAME AND HATCH SHALL BE EJ 00819661B02 OR APPROVED EQUAL.THE CAST IRON FRAME SHALL BE MANUALLY FASTENED TO THE STRUCTURE.
6. ONE (1) FRAME AND HATCH SHALL BE CAST WITH "AIRFIELD ELECTRICAL" (IN 3" HIGH LETTERS) ON THE COVERS AND ONE (1) SHALL BE CAST WITH "FAA CONTROL" (IN 3" HIGH LETTERS).
7. LIDS SHALL BE LOCKABLE INCLUDE ONE UNLOCKING TOOL PER LID.
8. PROVIDE PRECAST LIFTING HOOTS ON BOTH BOX AND CAST LID FOR INSTALLATION.



CONCRETE ENCASED ELECTRICAL CONDUIT; 1-WAY, 2 INCH IN EXISTING PAVEMENT

NOT TO SCALE

(ITEM L-110-5.1)



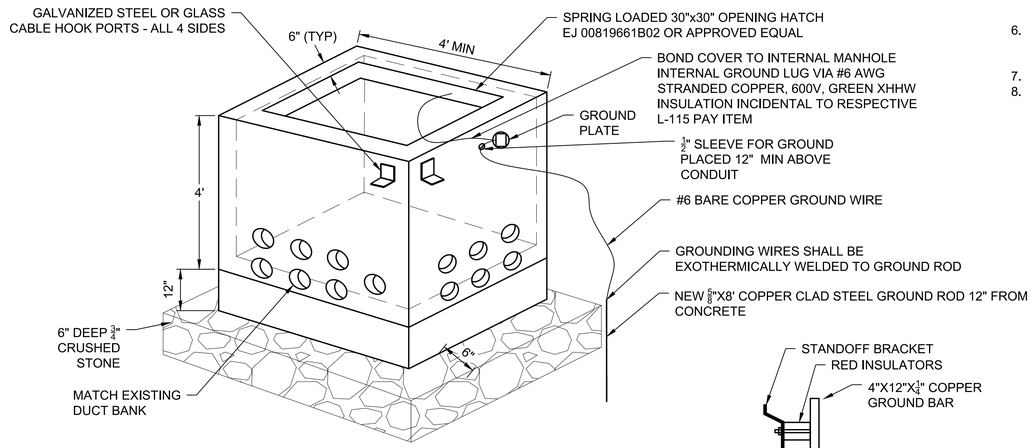
CONCRETE ENCASED ELECTRICAL CONDUIT; 1-WAY, 2 INCH IN NEW PAVEMENT

NOT TO SCALE

(ITEM L-110-5.1)

NOTES:

1. REFER TO PAVEMENT SECTIONS ON SHEETS TS-01 AND TS-02 FOR TRENCH PAVEMENT.



ELECTRICAL MANHOLE (AIRCRAFT RATED) DETAIL

NOT TO SCALE

(ITEM L-115-5.1)

ELECTRIC MANHOLE (AIRCRAFT RATED) NOTES:

1. CONTRACTOR TO PROVIDE SHOP DRAWING OF PRECAST CONCRETE STRUCTURE, FRAME AND COVER TO ENGINEER FOR APPROVAL.
2. PRECAST CONCRETE ELECTRICAL MANHOLE STRUCTURES SHALL BE DESIGNED TO SUPPORT A MINIMUM OF 100,000LB DUAL WHEEL LOADING. DESIGN CALCULATION SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER AND RPR, STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE. STEEL REINFORCEMENT SHALL MEET REQUIREMENTS OF ASTM 615 WITH 1" MIN COVER. CONCRETE SHALL BE 5,000 LB COMPRESSIVE STRENGTH
3. PRECAST STRUCTURE SHALL HAVE A DRY WELL OR SUMP. AS WELL AS A 3" KNOCKOUT LOCATED ON THE SIDE OF THE HANDHOLE FOR DRAINAGE.
4. LOW VOLTAGE (600V) AND HIGH VOLTAGE (5000V) CONDUCTORS SHALL BE PLACED ON OPPOSITE SIDES OF THE MANHOLE STRUCTURE.
5. CONDUCTORS CABLES SHALL BE PROVIDED WITH SUFFICIENT SLACK TO REMOVE CABLES ABOVE GRADE FOR WORKING ON THE CABLES. CABLES SHALL BE BUNDLED, AND TIED TOGETHER FOR ORGANIZATION.
6. CONDUCTOR CABLES SHALL BE SUPPLIED WITH INDUSTRIAL CABLE TAGS TO IDENTIFY THE ELECTRICAL CIRCUIT. A MINIMUM OF TWO CABLE MARKERS ARE REQUIRED ON EACH CONDUCTOR SIDE OF SPLICE.
7. PROVIDE A PULLEYE ON EACH WALL

ENGINEER'S SEAL

THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

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McFarland Johnson

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CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL DETAILS (1 OF 5)

SCALE: NTS
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

FILE NAME:

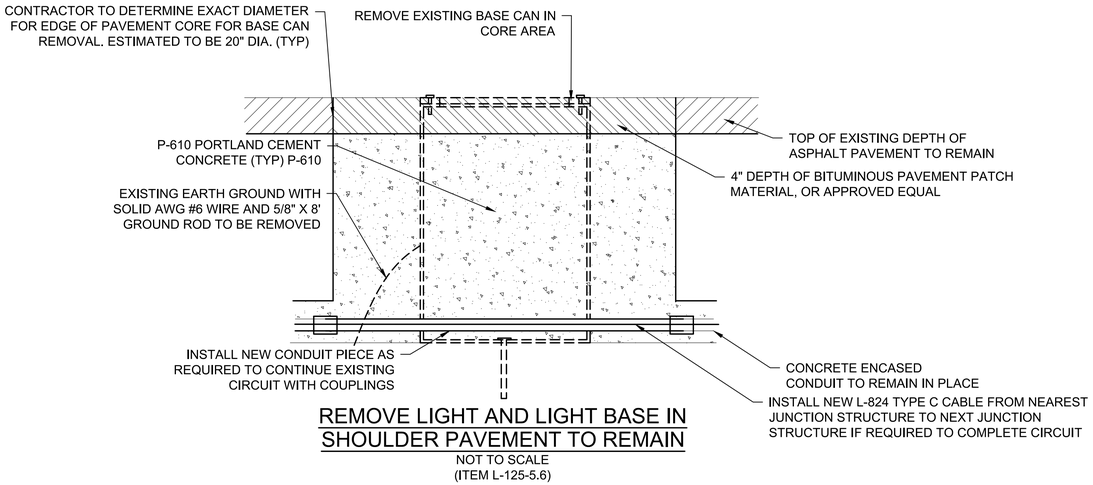
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.

EP-05

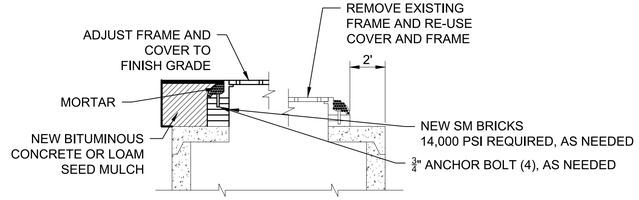
SHEET 69 OF 90

REV



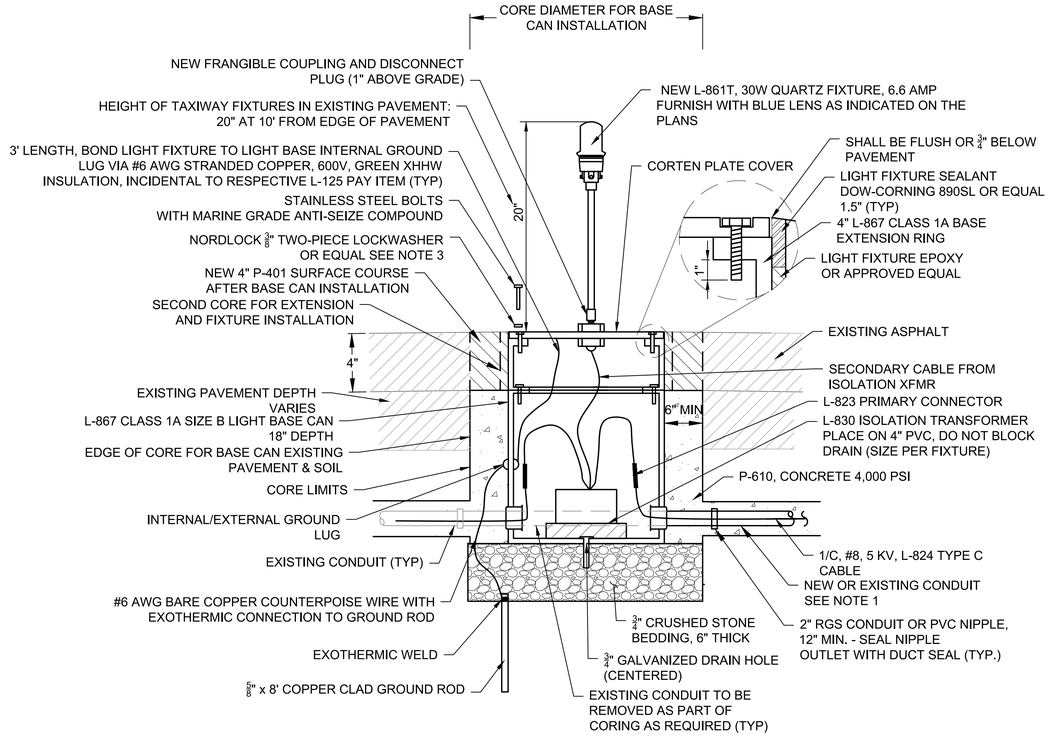
REMOVE LIGHT AND LIGHT BASE IN SHOULDER PAVEMENT TO REMAIN

NOT TO SCALE
(ITEM L-125-5.6)



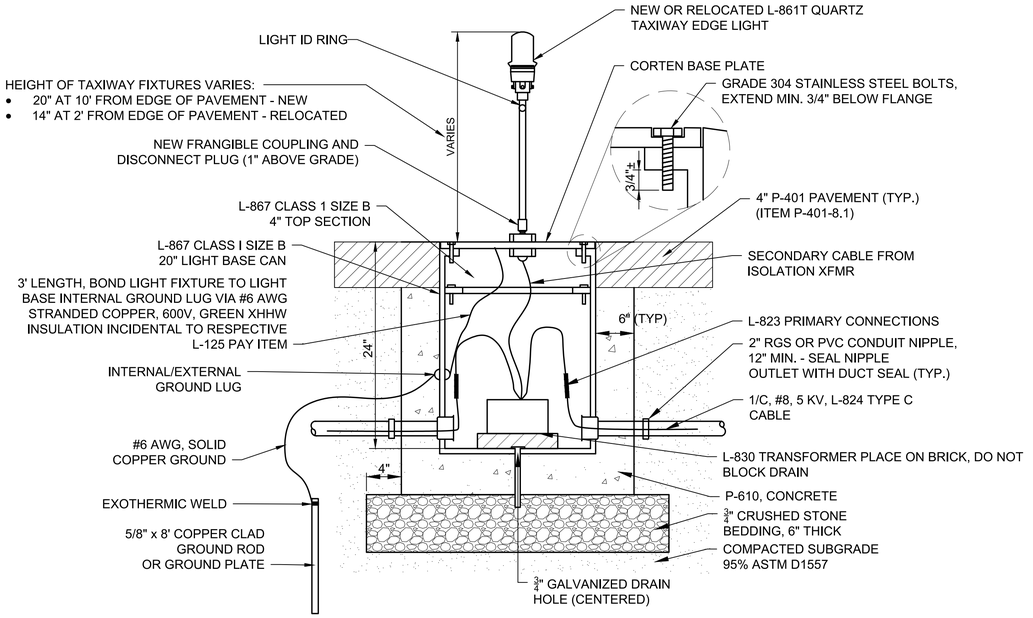
ADJUST EXISTING ELECTRIC STRUCTURE FRAME AND COVER

NOT TO SCALE
(ITEM L-115-5.2)



ELEVATED TAXIWAY EDGE LIGHT IN EXISTING PAVEMENT

NOT TO SCALE
(ITEM L-125-5.1)



NOTES:

1. TAXIWAY EDGE LIGHTS ARE TO BE SET EITHER 2' OR 10' FROM THE EDGE OF PAVEMENT TO THE CENTERLINE OF THE LIGHT FIXTURE. ALL ELEVATED TAXIWAY EDGE LIGHTS SET AT 2' FROM EDGE OF PAVEMENT SHALL BE EXISTING LIGHTS RELOCATED TO THE NEW LOCATION. SEE ELECTRICAL PLANS FOR LAYOUT OF ELEVATED TAXIWAY EDGE LIGHTS.
2. THE CONTRACTOR SHALL ADJUST THE HORIZONTAL DISTANCE FROM THE EDGE OF THE PAVEMENT SUCH THAT THE LIGHT FIXTURES FORM A STRAIGHT-LINE HORIZONTALLY ALONG THE ENTIRE TAXIWAY EDGE AND VERTICALLY FOLLOW THE TAXIWAY GRADE.
3. SUFFICIENT CABLE SLACK (MIN. OF 3 FEET) SHALL BE LEFT IN EACH BASE TO ALLOW TRANSFORMER(S) TO BE TAKEN OUT OF THE BASE.
4. ID NUMBER SHALL BE ASSIGNED USING A LOGICAL ORDER DEPENDENT ON EXISTING LIGHT ID NUMBERS AND APPROVED BY THE RPR AND AIRPORT OPERATIONS.
5. THE CONTRACTOR SHALL IDENTIFY WHICH LIGHT BASES REQUIRE MORE THAN TWO DUCTS OPENINGS TO ACCEPT ADDITIONAL CONDUIT.

ELEVATED TAXIWAY EDGE LIGHT IN NEW PAVEMENT

NOT TO SCALE
(ITEM L-125-5.1 OR L-125-5.5)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL DETAILS (2 OF 5)

SCALE: NTS
DATE: MARCH 2022

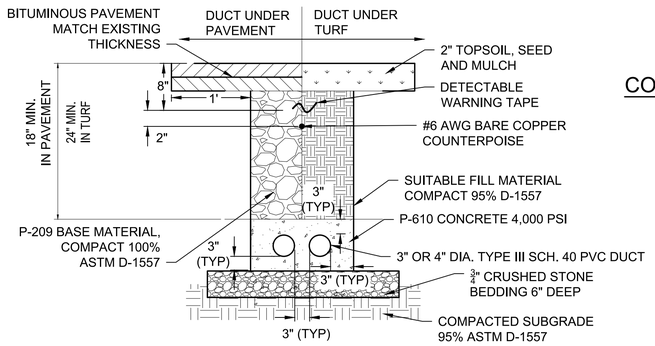
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

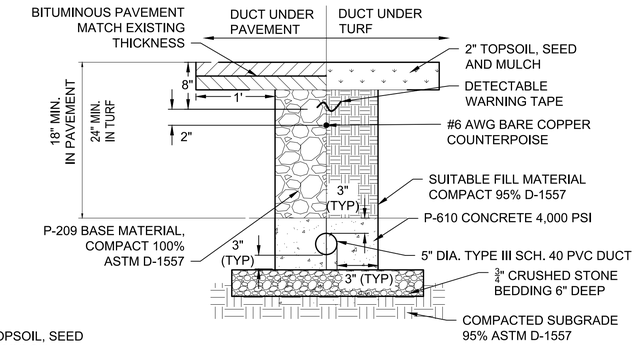
DRAWING NO.
EP-06

REV



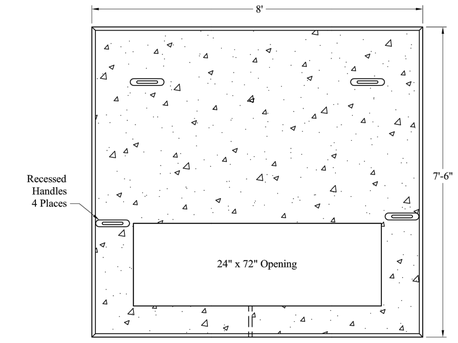
CONCRETE ENCASED ELECTRICAL DUCT BANK, 2 WAY-4" AND 2 WAY-3"

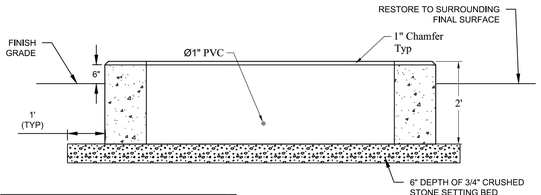
NOT TO SCALE
(ITEM M-400-5.4C & M-400-5.4D)



CONCRETE ENCASED ELECTRICAL DUCT BANK, 1 WAY-5"

NOT TO SCALE
(ITEM M-400-5.4A)

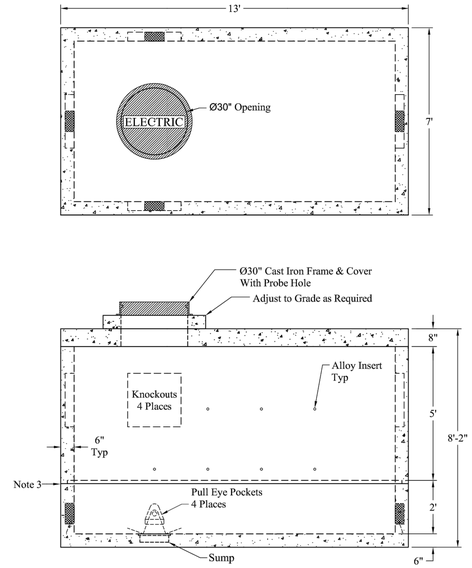




General Notes
1.) Reinforcement Steel Conforms To ASTM A615 Grade 60 #6 Rebar
2.) Concrete: fc = 4,500 psi @ 28 Days Minimum
3.) Meets or Exceeds Eversource Specifications
4.) Est. Weight: 14,200 Lbs

Basis of Design: Phoenix Precast Products PSNH 53-116 or equivalent

34.5 kV 3 Phase Transformer Pad
500 kVA Transformer
N.T.S.
(ITEM M-400-5.7A)



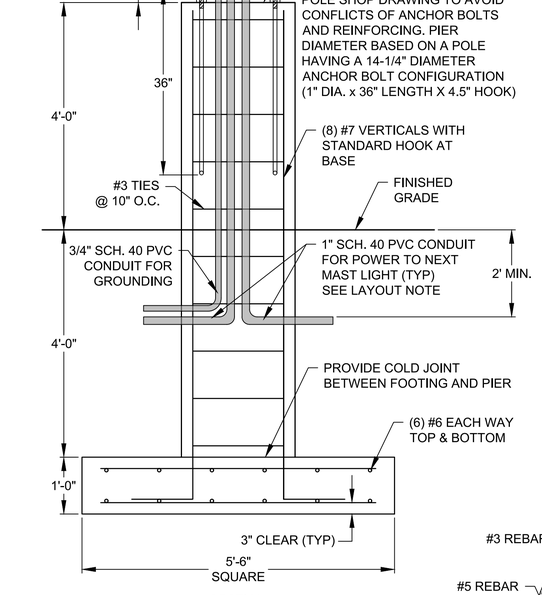
Est. Weights:

Top Slab:	8,500 Lbs
Riser:	13,300 Lbs
Base:	12,100 Lbs
Total:	33,900 Lbs

General Notes:
1. Steel Reinforcement Conforms to Latest ASTM Specifications: ASTM-A615 Grade 60 Rebar
2. Concrete: fc = 5,000 psi @ 28 Days Minimum
3. Butyl Rubber Joint Sealant Provided
4. Design Loading: AASHTO-HS20-44, ASTM C-890-06
5. Design Specified As: ASTM C-1227-08, ASTM C-913-08
6. Exterior Coating Provided
7. Meets Or Exceeds Eversource Requirements (Dwg R-10001-1)

Basis of Design: Phoenix Precast Products PSNHVAULT-1

EVERSOURCE ELECTRICAL MANHOLE - HS-20 LOADING
N.T.S.
(ITEM M-400-5.7B)

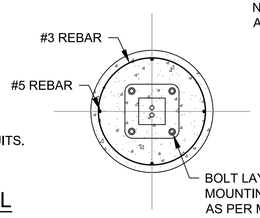


SECTION

NOTE: REFER TO SITE PLAN FOR NUMBER AND ORIENTATION OF CONDUITS. FINAL COORDINATION TO OCCUR DURING SHOP DRAWING REVIEW.

MAST LIGHT POLE FOUNDATION DETAIL

NOT TO SCALE
(ITEM M-400-5.7E)

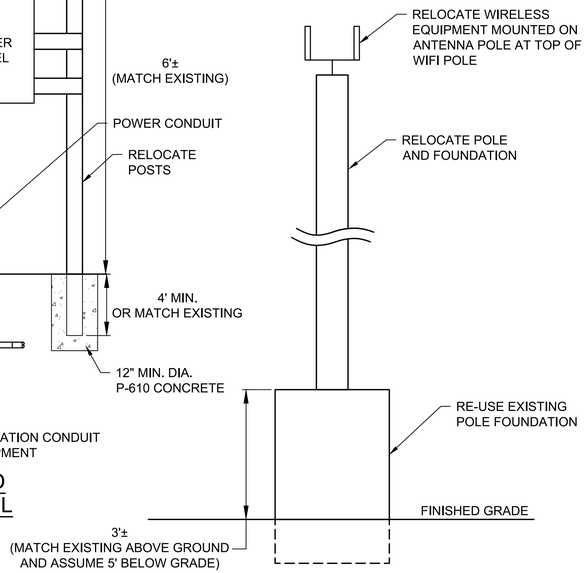


PLAN

NOTE: INSTALL NEW POWER AND COMMUNICATION CONDUIT AND CABLE TO CONNECT RELOCATED EQUIPMENT

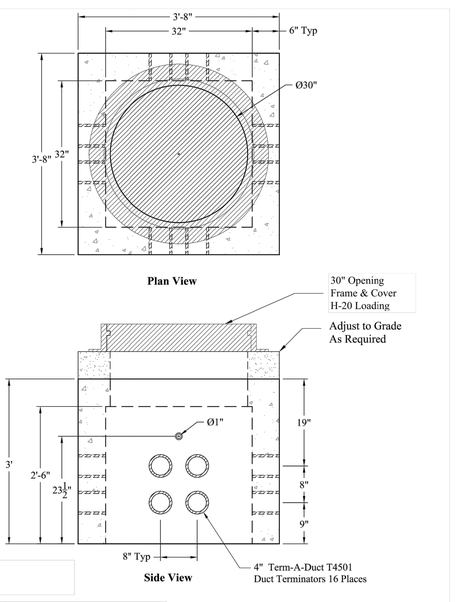
WIFI PANEL BOARD RELOCATION DETAIL

NOT TO SCALE
(ITEM M-400-5.10)



WIFI POLE RELOCATION DETAIL

NOT TO SCALE
(ITEM M-400-5.10)



Est.Weight: 3,500 Lbs

General Notes
1. Concrete: fc = 5,000 psi @ 28 Days Minimum
2. Reinforcing Steel: ASTM-A615 Grade #60 Black Deformed Bars
3. Design Load per ASTM C857-13 Standard Practice for Minimum Structural Design Loading for Underground Precast Utility Structures
4. Specification per ASTM C858-10 Standard Specification for Underground Precast Concrete Utility Structures
5. Duct Terminators: 4.50" ID Bowco Model T-4501

Basis of Design: Phoenix Precast Products C-6007 or equivalent

FAA Fiber Handhole
w/4" Duct Terminators
HS-20 Loading
N.T.S.
(ITEM M-400-5.7C)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL DETAILS (3 OF 5)

SCALE: NTS
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-07

SHEET 71 OF 90
REV

PROPOSED SIGN SCHEDULE – NEW SIGNS (BASE BID)

NO.	LEGEND FRONT	LEGEND BACK	SIZE	STYLE	MODULES	PANEL TYPE FRONT	PANEL TYPE BACK	ITEM #	REMARKS
AN 14	A C→	A	3	2	2	B/D	B/X	L-125-5.7A	
AN 15	C ← A →	C	3	2	3	B/D/D	B/X/X	L-125-5.2B	
AN 16	← C A	A	3	2	2	D/B	B/X	L-125-5.2A	

KEY	
A	MANDATORY
B	LOCATION
D	DIRECTION
X	BLANK

PROPOSED SIGN SCHEDULE – NEW SIGNS (ADD ALT 4)

NO.	LEGEND FRONT	LEGEND BACK	SIZE	STYLE	MODULES	PANEL TYPE FRONT	PANEL TYPE BACK	ITEM #	REMARKS
AN 17	Y ← D →	Y	3	2	3	B/D/D	B/X/X	L-125-5.2B	
AN 18	← Y D	D	3	2	2	D/B	B/X	L-125-5.2A	
AN 19	D Y→	D	3	2	2	B/D	B/X	L-125-5.7A	

RELOCATED SIGN SCHEDULE – RELOCATED SIGNS (ADD ALT 4)

NO.	LEGEND FRONT	LEGEND BACK	SIZE	STYLE	MODULES	PANEL TYPE FRONT	PANEL TYPE BACK	ITEM #	REMARKS
AN 10	D ← A →	D	3	2	3	B/D/D	B/X/X	L-125-5.3	

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No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL DETAILS (4 OF 5)

DATE: MARCH 2022
SCALE: NTS

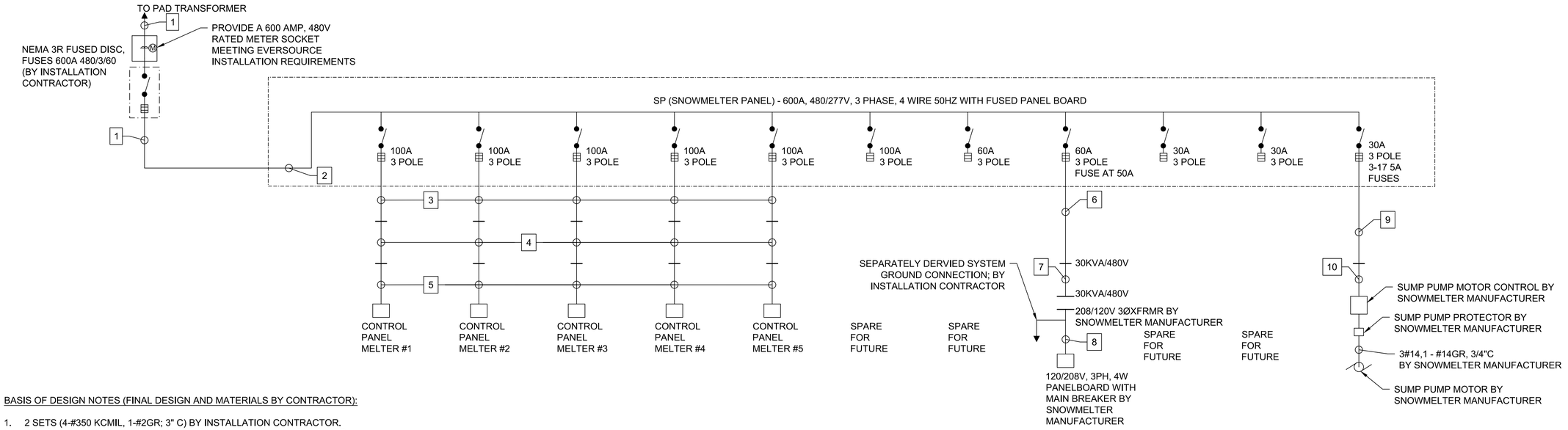
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-08

SHEET 72 OF 90
REV

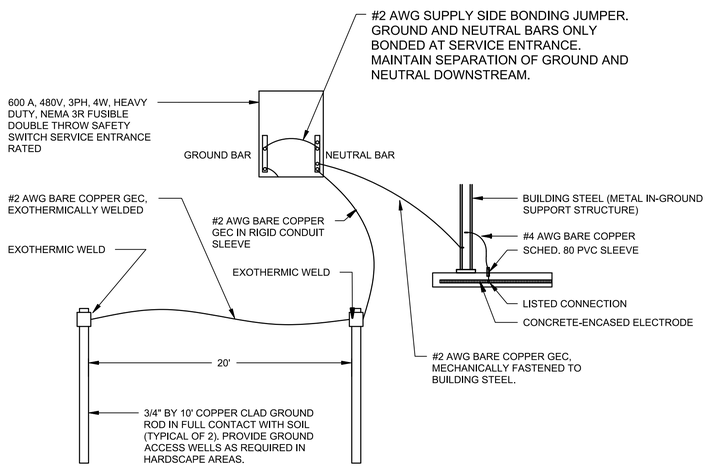


SNOWMELTER SYSTEM BASIS OF DESIGN ONE-LINE DIAGRAM

NOT TO SCALE

BASIS OF DESIGN NOTES (FINAL DESIGN AND MATERIALS BY CONTRACTOR):

1. 2 SETS (4-#350 KCMIL, 1-#2GR; 3" C) BY INSTALLATION CONTRACTOR.
2. 2 SETS (4-350 KCMIL, 1-#2GR; 3"C): BY SNOWMELTER MANUFACTURER.
3. 1-2"C FROM SP TO INSTALLATION STUB-UP AT WALL; BY SNOWMELTER MANUFACTURER 3-#2, 1-#8GR; BY SNOWMELTER MANUFACTURER.
4. 1-2" UG CONDUIT STUB-UP AT WALL AND AT EQUIPMENT BY INSTALLATION CONTRACTOR. 3-#2, 1-8GR; BY SNOWMELTER MANUFACTURER.
5. 1-2" C FROM STUB-UP AT EQUIPMENT TO EQUIPMENT: BY SNOWMELTER MANUFACTURER 3-#2, 1-#8GR; BY SNOWMELTER MANUFACTURER.
6. 1-2"C FROM PANEL TO STUB-UP AT TRANSFORMER BY INSTALLATION CONTRACTOR. 3#6, 1-#10GR BY SNOWMELTER MANUFACTURER.
7. 1-2"C FROM STUB-UP AT TRANSFORMER TO TRANSFORMER; 3#6, 1-#10GR: BY SNOWMELTER MANUFACTURER.
8. 1-2"C FROM TRANSFORMER TO PANELBOARD: 4#2, 1-#8GR; BY SNOWMELTER MANUFACTURER.
9. 1-2"C FROM PANEL TO STUB-UP AT STARTER BY INSTALLATION CONTRACTOR: 3-#12, 1-#12GR: BY SNOWMELTER MANUFACTURER.
10. 1-2"C FROM STUB-UP AT STARTER TO STARTER 3#12, 1-#12GR: BY SNOWMELTER MANUFACTURER.



SERVICE GROUNDING DETAIL

NOT TO SCALE

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

ELECTRICAL DETAILS (5 OF 5)

SCALE: NTS
DATE: MARCH 2022

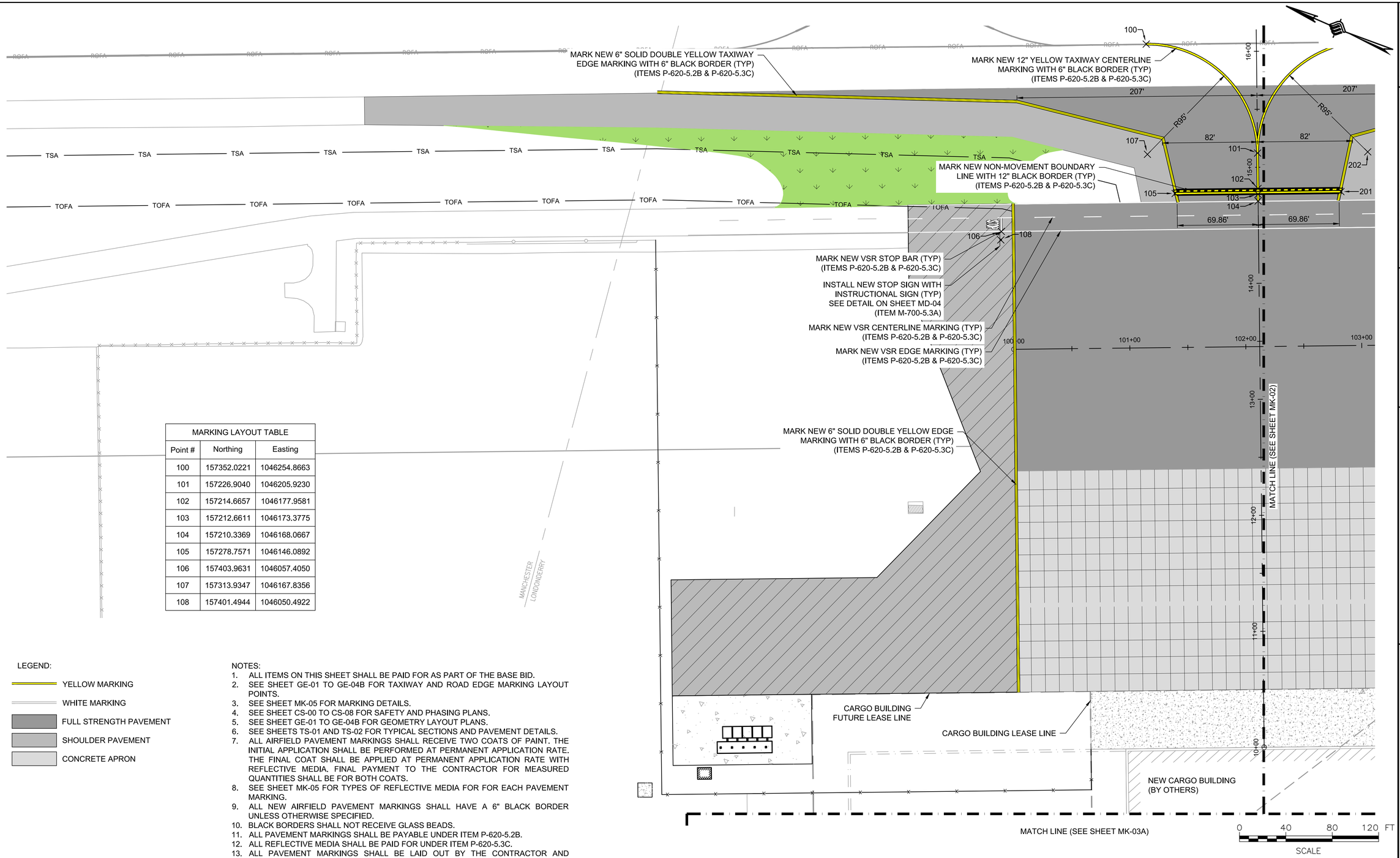
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
EP-09

SHEET 73 OF 90
REV



MARKING LAYOUT TABLE		
Point #	Northing	Easting
100	157352.0221	1046254.8663
101	157226.9040	1046205.9230
102	157214.6657	1046177.9581
103	157212.6611	1046173.3775
104	157210.3369	1046168.0667
105	157278.7571	1046146.0892
106	157403.9631	1046057.4050
107	157313.9347	1046167.8356
108	157401.4944	1046050.4922

LEGEND:

- YELLOW MARKING
- WHITE MARKING
- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON

NOTES:

1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET GE-01 TO GE-04B FOR TAXIWAY AND ROAD EDGE MARKING LAYOUT POINTS.
3. SEE SHEET MK-05 FOR MARKING DETAILS.
4. SEE SHEET CS-00 TO CS-08 FOR SAFETY AND PHASING PLANS.
5. SEE SHEET GE-01 TO GE-04B FOR GEOMETRY LAYOUT PLANS.
6. SEE SHEETS TS-01 AND TS-02 FOR TYPICAL SECTIONS AND PAVEMENT DETAILS.
7. ALL AIRFIELD PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT. THE INITIAL APPLICATION SHALL BE PERFORMED AT PERMANENT APPLICATION RATE. THE FINAL COAT SHALL BE APPLIED AT PERMANENT APPLICATION RATE WITH REFLECTIVE MEDIA. FINAL PAYMENT TO THE CONTRACTOR FOR MEASURED QUANTITIES SHALL BE FOR BOTH COATS.
8. SEE SHEET MK-05 FOR TYPES OF REFLECTIVE MEDIA FOR FOR EACH PAVEMENT MARKING.
9. ALL NEW AIRFIELD PAVEMENT MARKINGS SHALL HAVE A 6" BLACK BORDER UNLESS OTHERWISE SPECIFIED.
10. BLACK BORDERS SHALL NOT RECEIVE GLASS BEADS.
11. ALL PAVEMENT MARKINGS SHALL BE PAYABLE UNDER ITEM P-620-5.2B.
12. ALL REFLECTIVE MEDIA SHALL BE PAID FOR UNDER ITEM P-620-5.3C.
13. ALL PAVEMENT MARKINGS SHALL BE LAID OUT BY THE CONTRACTOR AND APPROVED BY THE RPR PRIOR TO MARKING.

ENGINEER'S SEAL

THE STATE OF NEW HAMPSHIRE
BRIAN
BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER

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PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING PLAN – BASE BID

SCALE: 1" = 40' | DATE: MARCH 2022

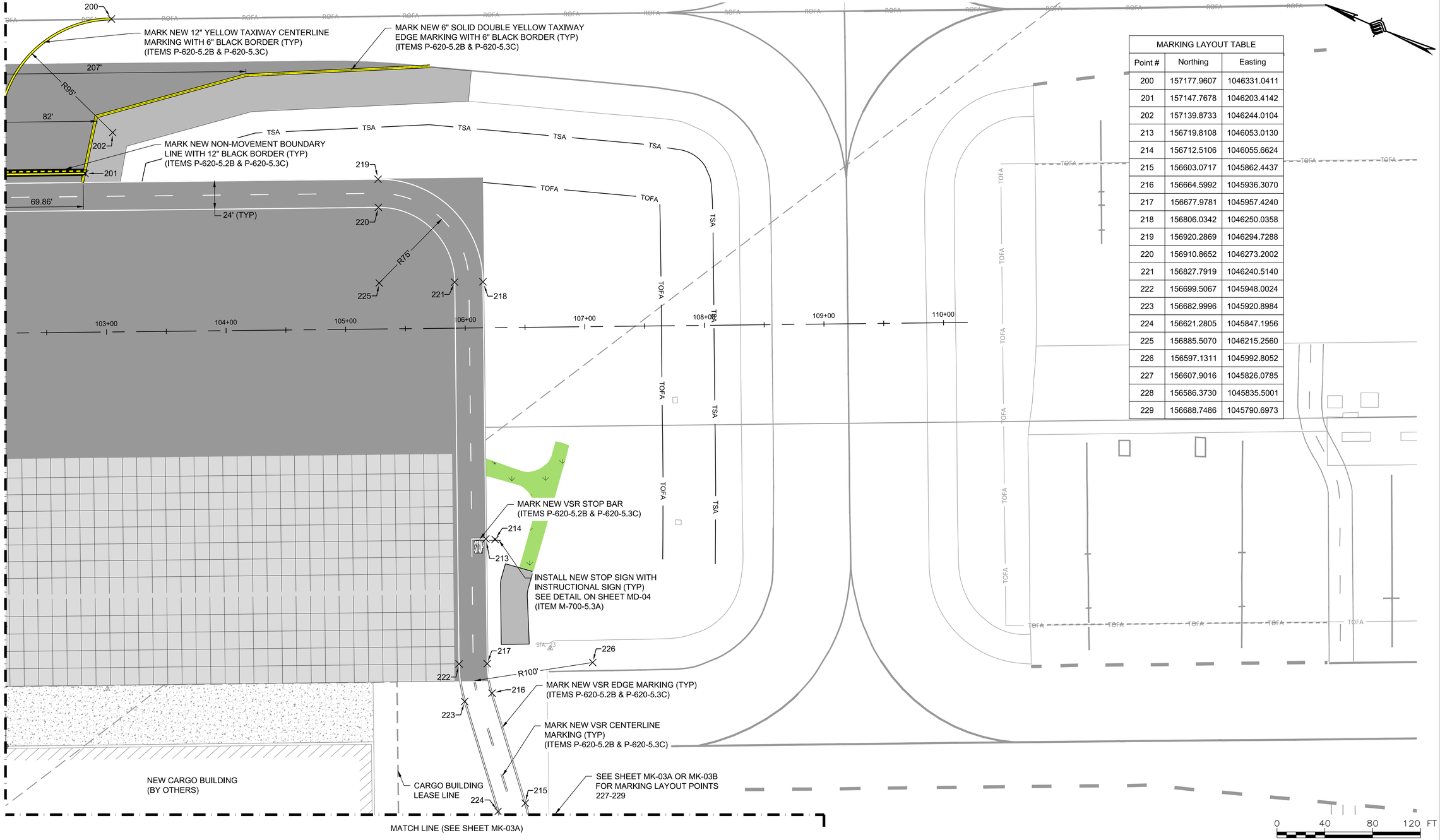
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MK-01

SHEET 74 OF 90 REV



MARKING LAYOUT TABLE		
Point #	Northing	Easting
200	157177.9607	1046331.0411
201	157147.7678	1046203.4142
202	157139.8733	1046244.0104
213	156719.8108	1046053.0130
214	156712.5106	1046055.6624
215	156603.0717	1045862.4437
216	156664.5992	1045936.3070
217	156677.9781	1045957.4240
218	156806.0342	1046250.0358
219	156920.2869	1046294.7288
220	156910.8652	1046273.2002
221	156827.7919	1046240.5140
222	156699.5067	1045948.0024
223	156682.9996	1045920.8984
224	156621.2805	1045847.1956
225	156885.5070	1046215.2560
226	156597.1311	1045992.8052
227	156607.9016	1045826.0785
228	156586.3730	1045835.5001
229	156688.7486	1045790.6973

LEGEND:

- YELLOW MARKING
- WHITE MARKING
- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON

NOTES:
1. ALL ITEMS ON THIS SHEET SHALL BE PAID FOR AS PART OF THE BASE BID.
2. SEE SHEET MK-01 FOR MARKING NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING PLAN – BASE BID

SCALE: 1" = 40'
DATE: MARCH 2022

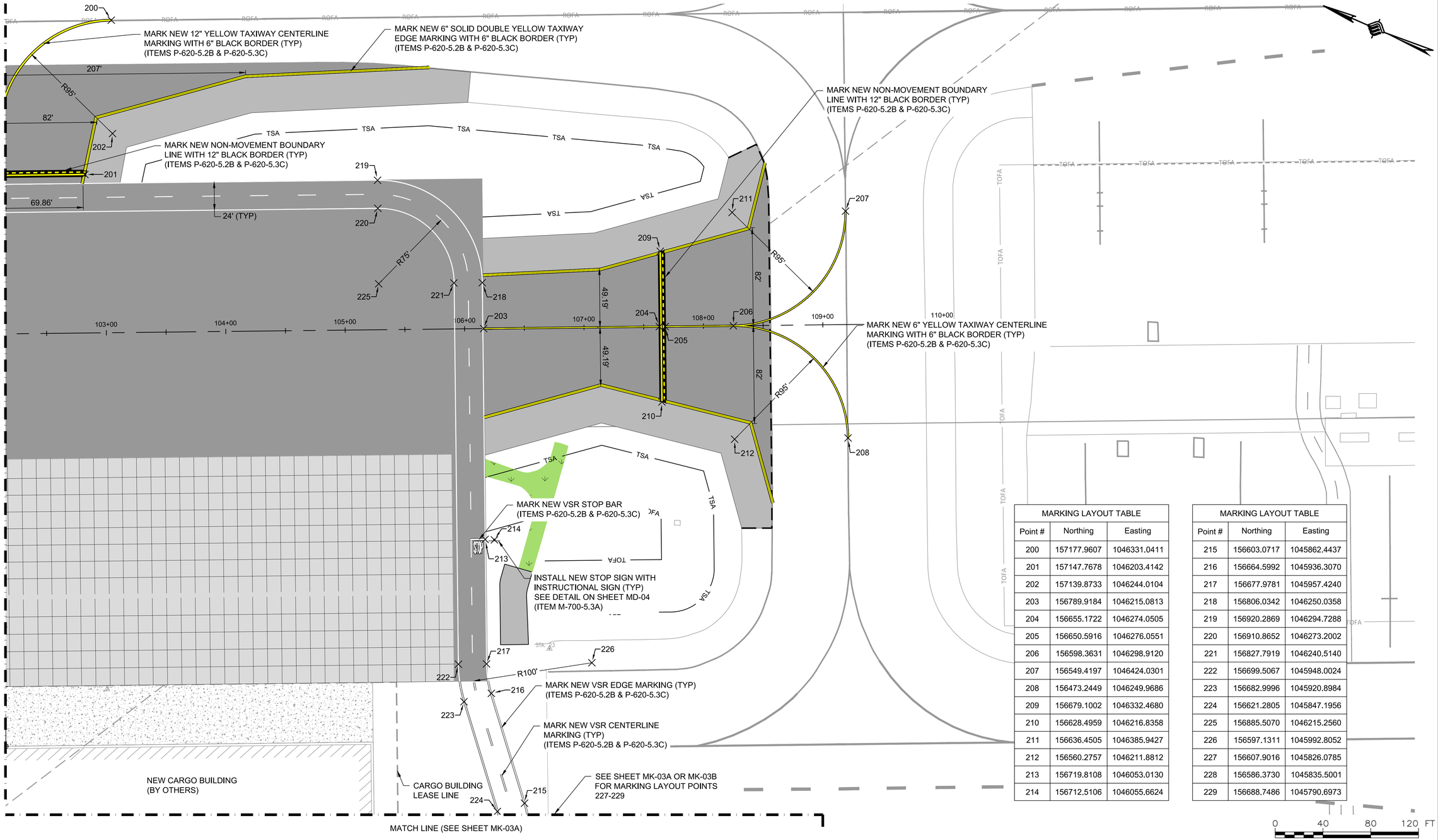
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MK-02

SHEET 75 OF 90
REV



MARKING LAYOUT TABLE		
Point #	Northing	Easting
200	157177.9607	1046331.0411
201	157147.7678	1046203.4142
202	157139.8733	1046244.0104
203	156789.9184	1046215.0813
204	156655.1722	1046274.0505
205	156650.5916	1046276.0551
206	156598.3631	1046298.9120
207	156549.4197	1046424.0301
208	156473.2449	1046249.9686
209	156679.1002	1046332.4680
210	156628.4959	1046216.8358
211	156636.4505	1046385.9427
212	156560.2757	1046211.8812
213	156719.8108	1046053.0130
214	156712.5106	1046055.6624

MARKING LAYOUT TABLE		
Point #	Northing	Easting
215	156603.0717	1045862.4437
216	156664.5992	1045936.3070
217	156677.9781	1045957.4240
218	156806.0342	1046250.0358
219	156920.2869	1046294.7288
220	156910.8652	1046273.2002
221	156827.7919	1046240.5140
222	156699.5067	1045948.0024
223	156682.9996	1045920.8984
224	156621.2805	1045847.1956
225	156885.5070	1046215.2560
226	156597.1311	1045992.8052
227	156607.9016	1045826.0785
228	156586.3730	1045835.5001
229	156688.7486	1045790.6973

0 40 80 120 FT
SCALE

LEGEND:
- PROPOSED MARKING
- FULL STRENGTH PAVEMENT
- SHOULDER PAVEMENT
- CONCRETE APRON

NOTES:
1. THIS SHEET SHALL REPLACE SHEET MK-02 IF ADD ALTERNATE 4 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE TAXIWAY D TAXILANE CONNECTOR SHALL BE PAID FOR AS PART OF ADD ALT 4. ALL OTHER WORK SHOWN SHALL BE PAID FOR AS PART OF THE BASE BID.
3. SEE SHEET MK-01 FOR MARKING NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BOYNTON
No. 7416
LICENSED PROFESSIONAL ENGINEER

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McFarland Johnson
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PH: 603-225-2978 FAX: 603-225-0095
DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING PLAN – ADD ALT 4

SCALE: 1" = 40'
DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MK-02A

SHEET 76 OF 90
REV

MATCH LINE (SEE SHEET MK-01)

MATCH LINE (SEE SHEET MK-02)

INSTALL NEW STOP SIGN - MUTCD R1-1
SEE DETAIL ON SHEET MD-04
(ITEM M-700-5.3A)

NOTE: SEE SHEET MK-02 OR MK-02A
FOR MARKING LAYOUT POINT TABLE
CONTAINING POINTS 226-228

MARK NEW VSR CENTERLINE MARKING (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW VSR EDGE MARKING (TYP)
TIE-IN NEW MARKINGS TO EXISTING MARKINGS
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

BASE BID
ALTERNATE 1

MARK NEW WHITE ROADWAY
EDGE MARKING (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

ACCESS ROAD SHOULDER (TYP)

MARK NEW DOUBLE YELLOW ROADWAY
CENTERLINE MARKING (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW STOP BAR (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW CROSSWALK MARKING
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARKING LAYOUT TABLE		
Point #	Northing	Easting
300	156468.6874	1045529.7282
301	156498.0374	1045516.8852
302	156513.3561	1045510.1820
303	156583.7652	1045492.5027
304	156573.4135	1045470.0662
305	157018.1855	1045289.2781
306	157116.3262	1045299.4669
307	157160.1548	1045330.7151
308	157258.2167	1045340.9247
309	157208.0298	1045362.8419
310	157215.5307	1045381.8916
311	157218.1955	1045249.2825
312	157058.2736	1045380.8911
313	157050.8668	1045431.4768

0 40 80 120 FT
SCALE

LEGEND:

PROPOSED ROADWAY CENTERLINE MARKING

PROPOSED ROADWAY EDGE MARKING

NEW PAVEMENT

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 1 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.
3. SEE SHEET MK-01 FOR MARKING NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
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LICENSED PROFESSIONAL ENGINEER

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MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING PLAN – ALT 1

SCALE: 1" = 40' | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08

FILE NAME:

AIP No.: 3-33-0011-XXX-2021

DRAWING NO.

MK-03A

SHEET 77 OF 90

REV

MATCH LINE (SEE SHEET MK-01)

MATCH LINE (SEE SHEET MK-02)

MATCH LINE (SEE INSET A ON SHEET MK-04B)

MATCH LINE (SEE SHEET MK-04B)

NOTE: SEE SHEET MK-02 OR MK-02A FOR MARKING LAYOUT POINT TABLE CONTAINING POINTS 226-228

MARK NEW VSR CENTERLINE MARKING (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW VSR EDGE MARKING (TYP)
TIE-IN NEW MARKINGS TO EXISTING MARKINGS
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW STOP BAR (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW CROSSWALK MARKING
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW WHITE ROADWAY
EDGE MARKING (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

MARK NEW DOUBLE YELLOW ROADWAY
CENTERLINE MARKING (TYP)
SEE DETAIL ON SHEET MK-05
(ITEMS P-620-5.2B & P-620-5.3C)

ACCESS ROAD SHOULDER (TYP)

CENTER OF RADIUS
(NOT SHOWN)

BENCHMARK
TBM-A MNS HH POLE
ELEV.=222.90

BENCHMARK
TBM-B NE BOLT IN LIGHT BASE
ELEV.=225.09

MARKING LAYOUT TABLE		
Point #	Northing	Easting
300	156468.6874	1045529.7282
301	156498.0374	1045516.8852
302	156513.3561	1045510.1820
303	156583.7652	1045492.5027
304	156573.4135	1045470.0662
314	157031.3006	1045283.5391
315	157111.2493	1045092.4786
316	157104.4298	1045024.5675
317	157114.3514	1044965.1820
318	157130.0408	1044919.1377
319	156971.1684	1045146.1196
320	157232.6526	1045045.9897
321	157261.9704	1044989.8080

0 40 80 120 FT
SCALE

LEGEND:

- PROPOSED ROADWAY CENTERLINE MARKING
- PROPOSED ROADWAY EDGE MARKING
- NEW PAVEMENT

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. ALL WORK ASSOCIATED WITH THE MILLING AND OVERLAY OF THE TERMINAL LOADING DOCK PAVEMENT SHALL BE PAID FOR AS PART OF ADD ALTERNATE 3.
3. SEE SHEET MK-01 FOR MARKING NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BENNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
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53 REGIONAL DRIVE, CONCORD, NH 03301-5022
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CITY OF MANCHESTER
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MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING PLAN – ALT 2

SCALE: 1" = 40' | DATE: MARCH 2022

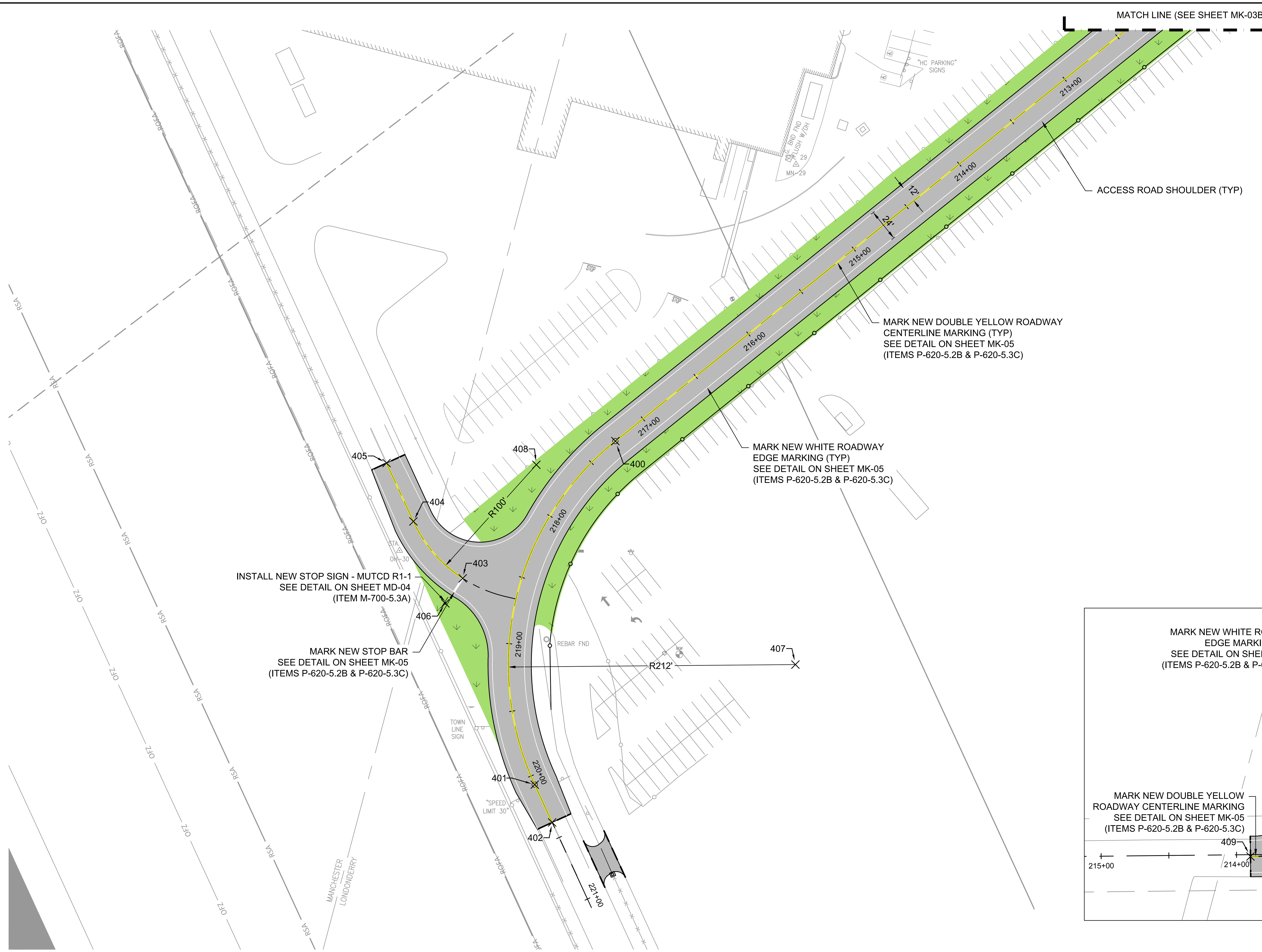
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

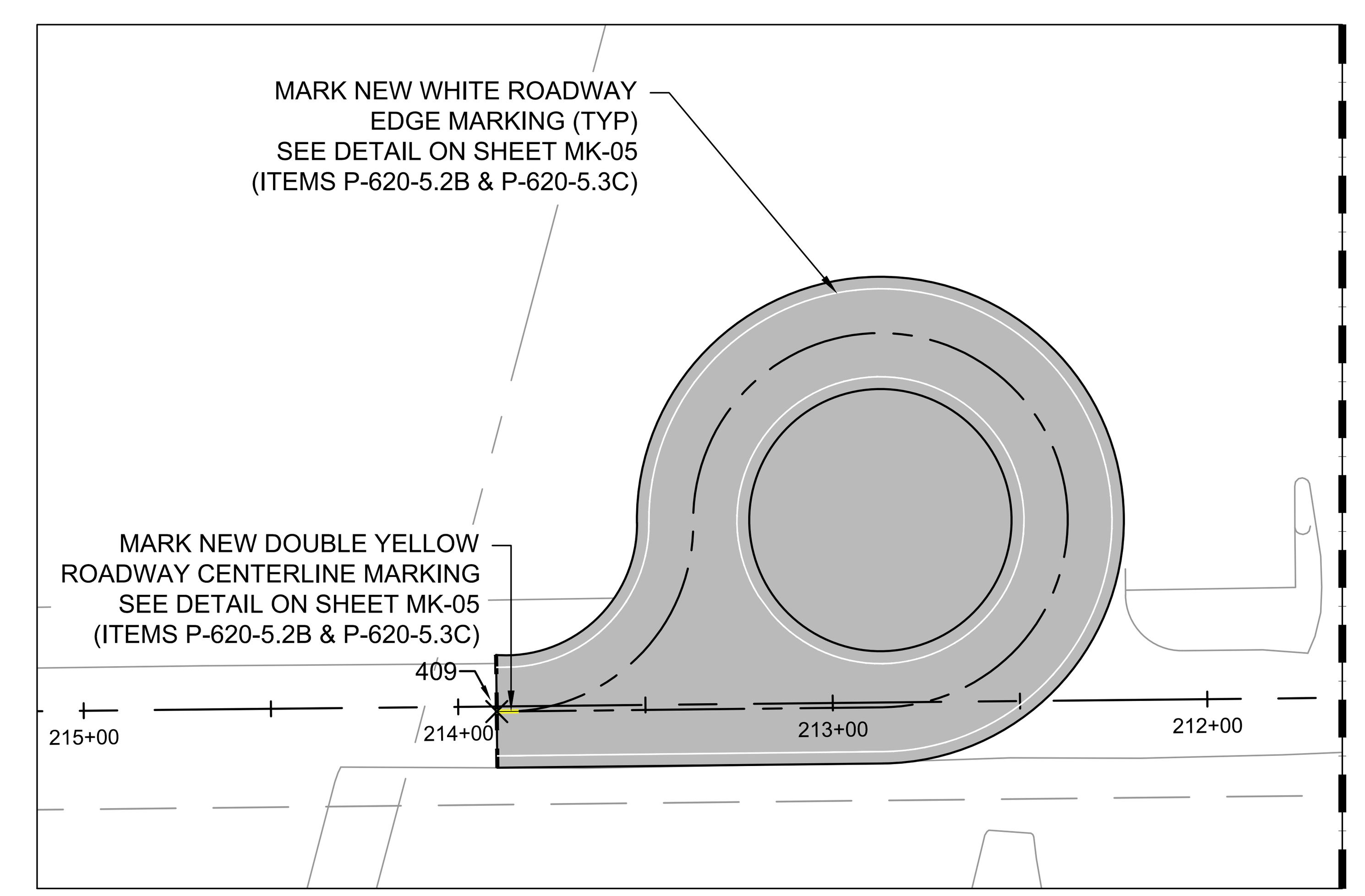
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MK-03B

SHEET 78 OF 90
REV



MARKING LAYOUT TABLE		
Point #	Northing	Easting
400	157378.5290	1044454.6947
401	157334.1694	1044197.7815
402	157311.4173	1044177.1080
403	157442.7009	1044317.3025
404	157492.6511	1044341.7842
405	157527.7851	1044373.7084
406	157447.3313	1044295.2743
407	157191.6016	1044354.6840
408	157425.4021	1044415.7948
409	157579.5431	1045199.0995



INSET A
SCALE: 1" = 40'

0 40 80 120 FT
SCALE

LEGEND:
- PROPOSED ROADWAY CENTERLINE MARKING
- PROPOSED ROADWAY EDGE MARKING
- NEW PAVEMENT

NOTES:
1. THIS SHEET SHALL ONLY BE INCLUDED IF ALTERNATE 2 IS AWARDED.
2. SEE SHEET MK-01 FOR MARKING NOTES.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE BRIAN M. DERRETT No. 7416 LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
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53 REGIONAL DRIVE, CONCORD, NH 03301-5022
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CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING PLAN- ALT 2

DATE: MARCH 2022
SCALE: 1" = 40'

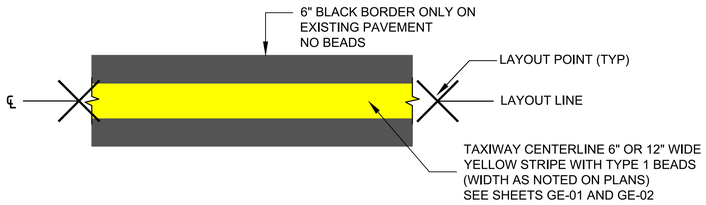
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

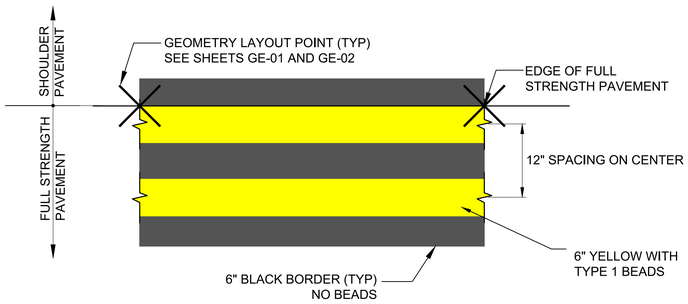
DRAWING NO.
MK-04B

SHEET 79 OF 90
REV



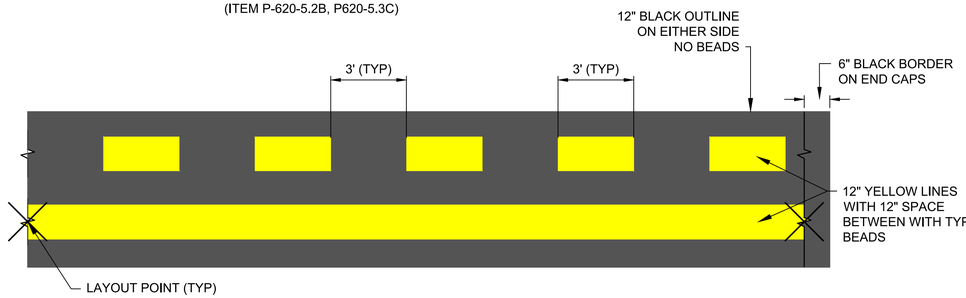
TAXIWAY CENTERLINE MARKING (YELLOW)

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



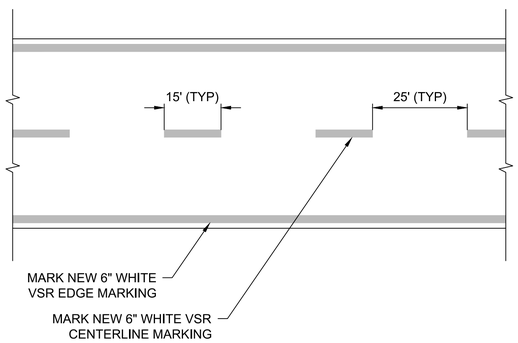
DOUBLE EDGE MARKING (YELLOW)

NOT TO SCALE
(ITEM P-620-5.2B, P620-5.3C)



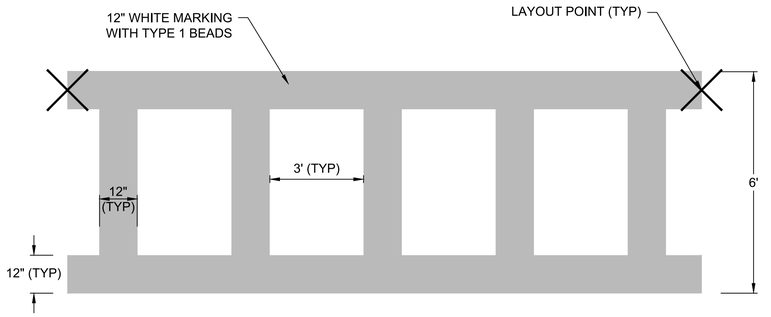
NON-MOVEMENT BOUNDARY LINE (YELLOW)

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



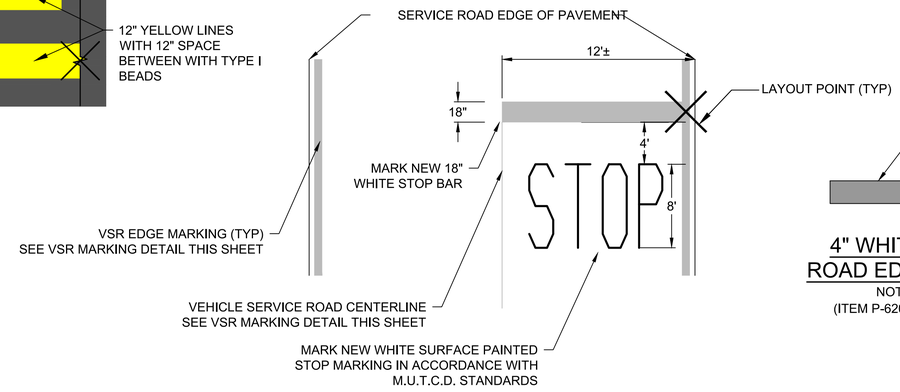
VEHICLE SERVICE ROAD (VSR) MARKING DETAIL

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



CROSSWALK MARKING (WHITE)

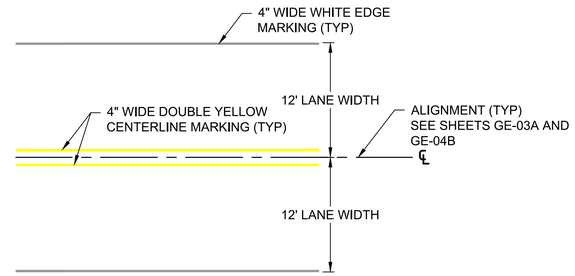
NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



VSR MARKING NOTES:
1. ALL VSR MARKINGS SHALL RECIEVE TYPE I GLASS BEADS.
2. ALL VSR MARKINGS SHALL BE LAID OUT AND APPROVED BY THE RPR AND AIRPORT REPRESENTATIVE PRIOR TO PERMANENT INSTALLATION.
3. ALL VSR MARKINGS SHALL BE INTERRUPTED BY INTERSECTING AIRFIELD MARKINGS.

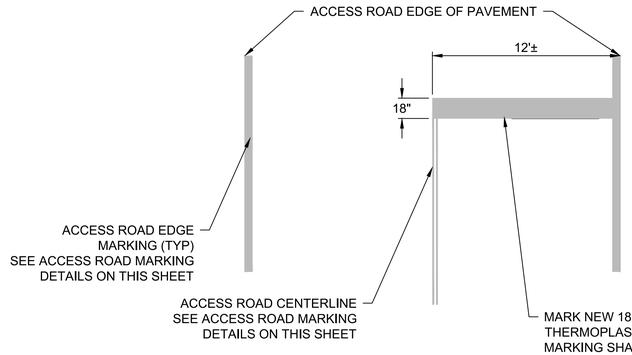
VEHICLE SERVICE ROAD (VSR) STOP BAR DETAIL

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



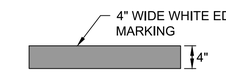
TYPICAL ACCESS ROAD LAYOUT

NOT TO SCALE



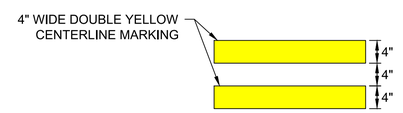
ACCESS ROAD STOP BAR DETAIL

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



4" WHITE ACCESS ROAD EDGE MARKING

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)



4" DOUBLE YELLOW ACCESS ROAD CENTERLINE MARKING

NOT TO SCALE
(ITEM P-620-5.2B, P-620-5.3C)

GENERAL ACCESS ROAD MARKING NOTES:
1. ALL ACCESS ROAD MARKINGS SHALL BE LAID OUT AND APPROVED BY THE RPR AND AIRPORT REPRESENTATIVE PRIOR TO PERMANENT INSTALLATION.
2. ALL ACCESS ROAD MARKINGS SHALL RECEIVE TYPE I GLASS BEADS.

GENERAL AIRFIELD MARKING NOTES:
1. SEE SHEET MK-01 TO MK-04B FOR MARKING PLANS.
2. BLACK BORDERS ARE REQUIRED SURROUNDING ALL AIRFIELD PAVEMENT MARKINGS. DIMENSIONS AS SHOWN ON THE DETAILS.
3. ALL AIRFIELD MARKINGS SHALL RECEIVE TYPE I - GRADATION A REFLECTIVE MEDIA EXCEPT FOR BLACK BORDERS WHICH SHALL NOT RECEIVE REFLECTIVE MEDIA.
4. PROVIDE 6" BLACK BORDER "ENDCAPS" WHERE APPLICABLE ON AIRFIELD MARKINGS.

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN
WENGERT
No. 7416
LICENSED
PROFESSIONAL ENGINEER

PROJECT DESIGNER
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53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095
DESIGNED BY DPB | DRAWN BY RHL | CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

MARKING DETAILS (1 OF 1)

SCALE: NTS | DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
MK-05

SHEET 80 OF 90
REV

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-2

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 3.5" Asphalt Pavement (0.3)			SS01	7 7 9		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (1)			SS02	8 14 12 10		
4	[FILL] Tan-brown, poorly silty Sand (SM); medium dense -shattered rock in spoon (2)			SS03	5 9 9 9		
	[GLACIAL OUTWASH] Grey-tan, poorly graded Sand (SP-SM) with silt; medium dense (5)						
8 ▽	Grey-tan, poorly graded Sand (SP); medium dense			SS04	4 4 4 7		
12	-becomes loose -becomes grey			SS05	1 4 3 2		
16							
20	-becomes very loose			SS06	2 1 1 1		
	Boring terminated at 22 ft.						
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-3

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 3.0" Asphalt Pavement (0.25)			SS01	8 12 9 7		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.5)			SS02	4 4 5 7		
4	[FILL] Light brown poorly graded Sand (SP-SM) with silt, medium dense -possible reworked native soil -shattered rock in spoon -becomes loose			SS03	4 5 7 7		
8 ▽	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP); medium dense; moist			SS04	2 3 3 7		
12	-becomes loose						
16	-becomes very loose -no recovery			SS05	2 2 2 2		
20	-no recovery			SS06	4 3 3 3		
	Boring terminated at 22 ft.						
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-4

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 5" Asphalt Pavement (0.4)			SS01	8 11 10 6		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.67)			SS02	4 3 4 10		
4	[FILL] Light brown poorly graded Sand (SP-SM) with silt; medium dense -possible reworked native soil (3.5)			SS03	4 6 6 6		
	Dark brown peat; loose						
8 ▽	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; loose, moist -becomes medium dense -orange color mottling Light grey, poorly graded Sand (SP); loose			SS04	2 3 4 4		
12				SS05	1 0 1 2		
16							
20	-becomes finer			SS06	1 1 1 3		
	Boring terminated at 22 ft.						
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-5

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 3.0" Asphalt Pavement (0.25)			SS01	3 8 8 9		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel			SS02	6 10 15 18		
4	[FILL] Dark tan, poorly graded Sand (SP-SM) with silt; medium dense -possible reworked native soil -becomes dark, orange brown			SS03	5 7 7 9		
	Grey-tan, poorly graded Sand (SP); medium dense; moist						
8 ▽				SS04	7 7 7 9 9 4 3 3		
12	Boring terminated at 12 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-6

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 4.0" Asphalt Pavement (0.33)			SS01	5 6 6 6		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (1)			SS02	6 5 5 6		
4	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense, Light grey-tan, poorly graded Sand (SP); medium dense -moist at spoon tip			SS03	5 8 9 10		
8 ▽	-becomes wet			SS04	10 9 9 9		
12	-becomes loose			SS05	3 3 3 3		
	Boring terminated at 12 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-7

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 4.0" Asphalt Pavement (0.33)			SS01	6 15 12 10		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel			SS02	6 3 6 8		
4	[FILL] Light brown, poorly graded Sand (SP-SM) with silt, trace gravel; medium dense -becomes loose -possible reworked native soil			SS03	4 6 6 8		
8 ▽	[GLACIAL OUTWASH] Grey tan, poorly graded Sand (SP); medium dense -becomes wet			SS04	9 7 7 9		
12	-becomes loose			SS05	3 4 3 2		
	Boring terminated at 12 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-8

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 2.0" Asphalt Pavement (0.17)			SS01	7 12 10 11		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel			SS02	6 4 6 5		
4	[GLACIAL OUTWASH] Tan-grey, poorly graded Sand (SP-SM) with silt; medium dense -organics at top of sample Tan-grey, poorly graded Sand (SP); loose			SS03	3 4 4 4		
	-becomes medium dense						
8 ▽	Red-brown Peat (8.5)			SS04	5 8 10 10		
12	-poorly graded Sand (SP) becomes loose			SS05	3 4 3 4		
	Boring terminated at 12 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-9

PROJECT: MHT Development **PROJECT NO.:** 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan **ELEVATION:** G.S.
DRILLER: Soil Exploration Corp. **LOGGED BY:** AP
DRILLING METHOD: 4.25" I.D. HSA **DATE:** 10/19/2021
DEPTH TO - WATER> INITIAL: 9.0 **AFTER 24 HOURS:**

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 3.5" Asphalt Pavement (0.3)			SS01	6 7 7 7		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.5)			SS02	6 7 10 10		
4	[FILL] Tan, poorly graded Sand (SP-SM) with silt; medium dense			SS03	6 8 4 4		
	[GLACIAL OUTWASH] Tan, poorly graded, Sand (SP-SM) with silt; medium dense						
8 ▽	-becomes loose -becomes moist			SS04	5 4 5 4		
12	Tan-grey, poorly graded Sand (SP); loose; wet				3 3 3 4		
	Boring terminated at 12 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 8

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN H. BENNETT
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LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5622
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: RHL
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

BORING LOGS (1 OF 4)

DATE: MARCH 2022
SCALE: NTS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
BL-01

SHEET 81 OF 90 REV

LOG OF BORING No. C/B-10

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/19/2021
DEPTH TO - WATER> INITIAL: 8.0 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.3	[PAVEMENT] 3.5" Asphalt Pavement
0.3–0.75	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
0.75–1.25	[FILL] Light tan and black, poorly graded Sand (SP-SM) with silt; medium dense
1.25–1.5	Dark brown Peat
1.5–11	[GLACIAL OUTWASH] Grey tan, poorly graded Sand (SP-SM) with silt; medium dense; Grey tan, poorly graded Sand (SP); medium dense; wet
11	Boring terminated at 11 ft.

Sample No.	Blow Counts
SS01	8, 7, 6, 6
SS02	5, 6, 7, 9
SS03	5, 6, 7, 10
SS04	8, 8, 8, 9
SS05	4, 7, 7, 7

Columns: Depth (feet) | Description | Graphic | Elevation (feet) | Sample No. | Blow Counts | % < #200 | TEST RESULTS: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-11

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.0 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.21	[PAVEMENT] 2.5" Asphalt Pavement
0.21–1	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
1–5	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt, organics; medium dense
5–11	Grey-tan, poorly graded Sand (SP); loose; -becomes medium dense; -becomes wet
11	Boring terminated at 11 ft.

Sample No.	Blow Counts
SS01	7, 10, 9, 11
SS02	5, 10, 7, 7
SS03	4, 4, 4, 6
SS04	6, 8, 8, 6
SS05	6, 8, 8, 8

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-12

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.5 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.3	[PAVEMENT] 3.0" Asphalt Pavement
0.3–2	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel; [FILL] Tan, poorly graded Sand (SP-SM) with silt; medium dense
2–5	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt and organics; medium dense
5–12	Grey-tan, poorly graded Sand (SP); loose; -becomes medium dense; -becomes wet
12	Boring terminated at 12 ft.

Sample No.	Blow Counts
SS01	4, 11, 13, 13
SS02	8, 13, 13, 15
SS03	2, 3, 3, 2
SS04	4, 5, 9, 12
SS05	7, 8, 8, 7

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-13

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.25 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.21	[PAVEMENT] 2.5" Asphalt Pavement
0.21–0.5	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
0.5–1.0	[FILL] Light brown, silty Sand (SM) with gravel; very dense
1.0–1.25	[RELIC TOPSOIL] Dark brown, sandy Silt (ML), trace organics
1.25–7	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt ; medium dense; -2" organics observed in spoon tip; -becomes loose; -orange color mottling
7–12	-becomes wet; -becomes loose
12	Boring terminated at 12 ft.

Sample No.	Blow Counts
SS01	5, 7, 7, 7
SS02	5, 8, 8, 10
SS03	5, 6, 8, 8
SS04	9, 9, 9, 9
SS05	4, 4, 3, 3

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-14

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.0 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.3	[PAVEMENT] 3.5" Asphalt Pavement
0.3–0.75	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
0.75–5	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP); medium dense
5–10	Grey-tan poorly graded Sand (SP-SM) with silt; medium dense; -wet at mid depth of spoon
10–12	Tan, poorly graded Sand (SP); loose; wet
12	Boring terminated at 12 ft.

Sample No.	Blow Counts
SS01	8, 8, 8, 10
SS02	6, 6, 4, 7
SS03	5, 6, 7, 7
SS04	12, 11, 10, 10
SS05	4, 4, 4, 4

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-15

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.0 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.21	[PAVEMENT] 2.5" Asphalt Pavement
0.21–0.5	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
0.5–7	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense; Grey-tan, poorly graded Sand (SP); medium dense
7–12	-becomes wet
12	Boring terminated at 12 ft.

Sample No.	Blow Counts
SS01	5, 6, 6, 6
SS02	5, 5, 6, 6
SS03	5, 8, 8, 10
SS04	5, 8, 12, 10
SS05	5, 5, 6, 5

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-16

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.25 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.21	[PAVEMENT] 2.5" Asphalt Pavement
0.21–0.5	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
0.5–2.0	[FILL] Light brown-tan, poorly graded Sand (SP-SM) with silt; dense; -pulverized concrete at spoon tip
2.0–12	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; loose; -becomes medium dense; -becomes wet; -becomes loose
12	Boring terminated at 12 ft.

Sample No.	Blow Counts
SS01	5, 6, 28, 10
SS02	3, 2, 3, 2
SS03	3, 3, 9, 9
SS04	9, 14, 14, 15
SS05	3, 4, 5, 6

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

LOG OF BORING No. C/B-17

JOHN TURNER CONSULTING

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.0 — AFTER 24 HOURS:

Depth (feet)	Description
0–0.21	[PAVEMENT] 3.5" Asphalt Pavement
0.21–0.5	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel
0.5–3.0	[FILL] Dark tan, silty Sand (SM) with gravel; very dense; -shattered rock in sample at 3.0 feet bgs
3.0–7	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; dense; -becomes medium dense
7–12	Grey-tan poorly graded Sand (SP); medium dense; wet
12	Boring terminated at 12 ft.

Sample No.	Blow Counts
SS01	4, 10, 10, 7
SS02	10, 20, 13, 13
SS03	4, 7, 8, 10
SS04	5, 7, 7, 9
SS05	10, 8, 9, 10

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

ENGINEER'S SEAL

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY DPB — DRAWN BY RHL — CHECKED BY BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

BORING LOGS (2 OF 4)

DATE: MARCH 2022
SCALE: NTS

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO. BL-02

SHEET 82 OF 90 — REV

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-18

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 9.0 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 2.5" Asphalt Pavement (0.2)			SS01	3 5 9 8		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.5)			SS02	9 9 9 14		
4	[FILL] Light brown-tan, poorly graded Sand (SP-SM) with silt; medium dense			SS03	2 8 8 7		
8	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense, moist -seams of organic silt observed in sample (5)			SS04	9 12 13 13		
	4" Dark brown Peat -bright orange discoloration of sample observed (5.33)			SS05	10 10 10 10		
12	Grey-tan, poorly graded Sand (SP); medium dense; wet at spoon tip						
	Boring terminated at 12 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-19

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 7.5 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 2.5" Asphalt Pavement (0.2)			SS01	7 12 10 10		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.5)			SS02	8 12 9 9		
4	[FILL] Brown-tan, poorly graded Sand (SP-SM) with silt; medium dense			SS03	6 5 8 9		
8	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense, Grey-tan, poorly graded Sand (SP-SM) with silt; medium dense -becomes wet			SS04	10 9 8 9		
				SS05	7 8 10 9		
12	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-20

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.5 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 2.5" Asphalt Pavement (0.2)			SS01	4 9 9 8		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.6)			SS02	7 6 5 3		
4	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense -organic silt seams observed in sample			SS03	4 6 7 8		
	6" Dark brown Peat (2.5)			SS04	10 9 9 10		
8	Grey-tan, poorly graded Sand (SP); medium dense			SS05	9 9 10 10		
12	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-21

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 8.5 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 3.0" Asphalt Pavement (0.25)			SS01	10 12 12 13		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.75)			SS02	11 16 14 16		
4	[FILL] Tan, silty Sand (SM) with silt and gravel; lens of grey silt near bottom of sample; medium dense -possible reworked native soil -shattered rock in spoon (5)			SS03	6 7 7 7		
8	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt, trace organics; medium dense (5.5)			SS04	11 10 10 9		
	6" Dark orange-brown,Peat -bright orange staining below organics (6.0)			SS05	11 11 10 9		
12	Tan-grey, poorly graded Sand (SP); medium dense;wet						
	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-22

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 6.5 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 4.5" Asphalt Pavement (0.38)			SS01	6 11 7 1		
	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel (0.75)			SS02	2 3 4 3		
4	[FILL] Orange-tan, poorly graded Sand (SP-SM) with silt and gravel; medium dense (1.5)			SS03	3 4 3 5		
8	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; loose -no recovery Grey-tan, well graded Sand (SW-SM) with silt; medium dense; wet -shattered rock in spoon			SS04	9 10 10 8		
				SS05	10 7 4 4		
12	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-23

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 6.0 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 4.0" Asphalt Pavement (0.3)			SS01	8 8 9 10		
	[PAVEMENT BASE] Dark brown, poorly graded Sand (SP-SM) with silt and gravel			SS02	8 11 9 5		
4	[FILL] Light brown, poorly graded Sand (SP-SM) with silt and gravel; medium dense			SS03	2 3 3 5		
8	[GLACIAL OUTWASH] Grey-tan, poorly graded Sand (SP-SM) with silt; medium dense (5.33)			SS04	6 10 9 8		
	4" Dark Brown Peat; loose Grey-tan, poorly graded Sand (SP); loose; wet -becomes medium dense -trace peat fibers in sample -becomes loose			SS05	4 3 5 4		
12	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-24

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 6.5 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 4.0" Asphalt Pavement (0.33)			SS01	4 5 5 9		
	[PAVEMENT BASE] Grey, silty Sand (SM) with gravel (0.83)			SS02	8 10 9 10		
4	[FILL] Grey-black, silty Sand (SM) with gravel; medium dense -organics at spoon tip (1.75)			SS03	5 7 8 9		
	3" Black-brown organics/muck (2.0)			SS04	6 6 5 4		
8	[GLACIAL OUTWASH] Tan-grey, poorly graded Sand (SP); medium dense -wet at spoon tip -becomes loose			SS05	3 3 2 6		
12	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING

LOG OF BORING No. C/B-25

PROJECT: MHT Development — PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan — ELEVATION: G.S.
DRILLER: Soil Exploration Corp. — LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA — DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 5.0 — AFTER 24 HOURS:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Description	Graphic	Elevation (feet)	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit — Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)
0	[PAVEMENT] 3.5" Asphalt Pavement (0.3)			SS01	5 12 13 14		
	[PAVEMENT BASE] Light brown-grey, poorly graded Sand (SP-SM) with silt and gravel (0.7)			SS02	9 12 15 14		
4	[FILL] Dark brown, poorly grade Sand (SP-SM) with silt and gravel; medium dense (1.5)			SS03	3 5 5 6		
8	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense Grey-tan, poorly graded Sand (SP); wet; loose			SS04	8 5 4 6		
				SS05	3 3 5 4		
12	Boring terminated at 11 ft.						
16							
20							
24							
28							

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

Figure PAGE 1 of 1

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE — BRIAN R. LEVESQUE — No. 7416 — LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER

McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5622
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY: DPB — DRAWN BY: RHL — CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

BORING LOGS (3 OF 4)

SCALE: NTS — DATE: MARCH 2022

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
BL-03

SHEET 83 OF 90 — REV

JOHN TURNER CONSULTING — LOG OF BORING No. C/B-26

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 5.0 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[PAVEMENT] 3.5" Asphalt Pavement	SS01	8 18 17 18
0.3	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel	SS02	13 14 20 19
0.6	[FILL] Light brown, poorly graded Sand (SP-SM) with silt and gravel; dense		
1.5	[GLACIAL OUTWASH] Tan, well graded Sand (SW-SM) with silt; dense -lenses of black sand at mid depth of sample	SS03	2 4 5 6
5	Grey-tan, poorly graded Sand (SP); loose; wet	SS04	5 6 2 2
	-becomes very loose	SS05	4 1 1 1
	Boring terminated at 11 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. C/B-27

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 5.0 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[PAVEMENT] 3.5" Asphalt Pavement	SS01	14 18 20 20
0.3	[PAVEMENT BASE] Light brown-grey, poorly graded Sand (SP-SM) with silt and gravel	SS02	15 26 25 27
0.6	[FILL] Dark brown, poorly grade Sand (SP-SM) with silt and gravel; dense	SS03	4 9 12 10
1.0	[GLACIAL OUTWASH] Tan, well graded Sand (SW-SM) with silt; dense, moist		
2	Grey-tan, poorly graded Sand (SP-SM) with silt; very dense, -becomes medium dense -becomes loose	SS04	8 6 4 4
		SS05	4 4 3 2
	Boring terminated at 11 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. C/B-28

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/20/2021
DEPTH TO - WATER> INITIAL: 6.5 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[PAVEMENT] 4.5" Asphalt Pavement	SS01	11 20 13 13
0.38	[PAVEMENT BASE] Grey, poorly graded Sand (SP-SM) with silt and gravel	SS02	12 26 50/1" - (76)
0.75	[FILL] Light brown, silty Sand (SM) with gravel; medium dense -shattered rock in spoon Brown grey, poorly sorted Sand (SP-SM) with silt and gravel; very dense -shattered rock in spoon -spoon refusal at 3.1 feet bgs -becomes medium dense -crushed concrete in top half of sample	SS03	15 16 4 4
		SS04	4 3 3 4
6	[GLACIAL OUTWASH] Grey-tan, poorly graded Sand (SP); loose, wet -becomes medium dense	SS05	6 5 3 2
	Boring terminated at 11 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. B-1

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/18/2021
DEPTH TO - WATER> INITIAL: 5.5 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[TOPSOIL] Dark brown sandy Silt (ML), roots, organics	SS01	1 5 6 8
0.75	[GLACIAL OUTWASH] Tan, poorly graded Sand (SP-SM) with silt; medium dense	SS02	7 8 7 8
5	Tan, poorly graded Sand (SP); medium dense; wet	SS03	4 7 7 10
		SS04	6 7 7 7
	-becomes loose	SS05	2 3 3 4
	Boring terminated at 12 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. B-2

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/18/2021
DEPTH TO - WATER> INITIAL: 5.5 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[TOPSOIL] Dark brown sandy Silt (ML), roots. organics	SS01	2 4 7 9
0.67	[GLACIAL OUTWASH] Grey-tan, laminated, poorly graded Sand (SP-SM) with silt; medium dense -orange color mottling	SS02	6 11 10 11
5	Grey-tan, poorly graded Sand (SP); medium dense; wet -orange color mottling	SS03	4 6 6 7
		SS04	5 6 6 7
		SS05	1 2 2 2
	Boring terminated at 12 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. B-3

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/18/2021
DEPTH TO - WATER> INITIAL: 8.0 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[TOPSOIL] Dark brown sandy Silt (ML), roots. organics	SS01	2 5 5 6
0.75	[FILL] Light brown, poorly graded Sand (SP-SM) with silt; medium dense -native sand reworked with topsoil	SS02	5 12 12 12
2	[RELIC TOPSOIL] Dark brown, sandy Silt (ML), trace organics	SS03	5 8 8 8
2.25	[GLACIAL OUTWASH] Grey to tan, laminated, poorly graded Sand (SP); medium dense, moist -lenses of black sand in sample	SS04	6 7 7 10
5	Grey-tan, poorly graded Sand (SP-SM) with silt; medium dense -heavy orange staining at top of sample -becomes wet	SS05	5 6 6 5
10	Grey-tan, poorly graded Sand (SP); medium dense		
	Boring terminated at 12 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. B-4

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/18/2021
DEPTH TO - WATER> INITIAL: 9.0 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[TOPSOIL] Dark brown sandy Silt (ML), roots. organics	SS01	2 3 4 6
1	[FILL] Light brown, poorly graded Sand (SP-SM) with silt; loose	SS02	6 12 14 14
2	[RELIC TOPSOIL] Dark brown, sandy Silt (ML), trace organics, roots		
2.25	[GLACIAL OUTWASH] Grey to tan, laminated, poorly graded Sand (SP-SM) with silt; medium dense	SS03	6 10 10 10
5	Brown-black, organic material	SS04	9 9 9 9
5.5	Dark tan, poorly graded Sand (SP-SM) with silt; medium dense -heavy orange staining at top of spoon -becomes wet	SS05	3 5 5 5
	Boring terminated at 12 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

JOHN TURNER CONSULTING — LOG OF BORING No. B-5

PROJECT: MHT Development | PROJECT NO.: 21-04-098
CLIENT: McFarland-Johnson
PROJECT LOCATION: Manchester-Boston Regional Airport, Manchester, NH
LOCATION: See Exploration location plan | ELEVATION: G.S.
DRILLER: Soil Exploration Corp. | LOGGED BY: AP
DRILLING METHOD: 4.25" I.D. HSA | DATE: 10/18/2021
DEPTH TO - WATER> INITIAL: 9.0 | AFTER 24 HOURS:

Depth (feet)	Description	Sample No.	Blow Counts
0	[TOPSOIL] Dark brown sandy Silt (ML), roots. organics	SS01	2 4 7 7
0.25	[FILL] Light brown, silty Sand (SM) with gravel; medium dense -shattered rock in spoon	SS02	6 5 5 5
	[RELIC TOPSOIL] Dark brown, sandy Silt (ML), trace organics, roots		
2	[GLACIAL OUTWASH] Grey to tan, laminated, poorly graded Sand (SP-SM) with silt; medium dense	SS03	5 5 6 7
3.5	Dark brown Peat	SS04	8 8 8 9
4	-becomes dark tan		
	-becomes wet -becomes loose	SS05	3 4 5 5
	Boring terminated at 12 ft.		

Test Results: Plastic Limit ├─┤ Liquid Limit; Water Content - •; Penetration - (10 20 30 40 50)

Test boring backfilled with soil cuttings and/or asphalt patch upon completion.

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Figure PAGE 1 of 1

ENGINEER'S SEAL

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY: DPB | DRAWN BY: RHL | CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER–BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

BORING LOGS (4 OF 4)

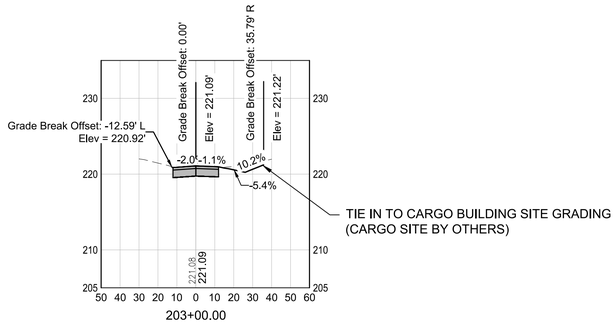
DATE: MARCH 2022
SCALE: NTS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

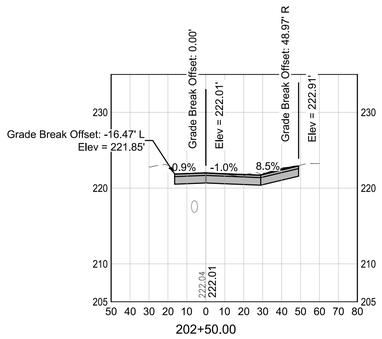
DRAWING NO. BL-04

SHEET 84 OF 90 REV

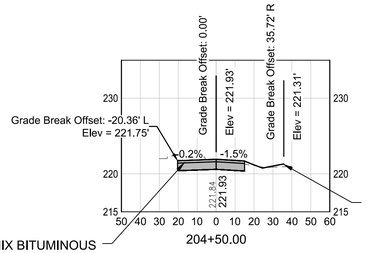


TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

203+00.00



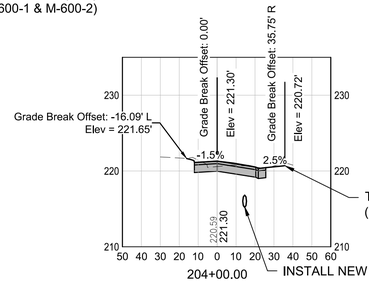
202+50.00



TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

204+50.00

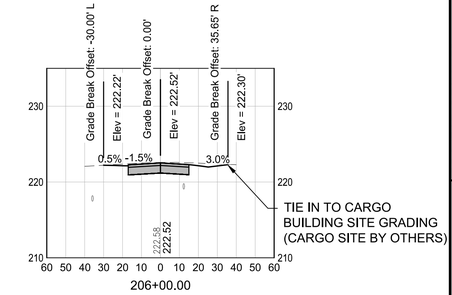
1 ½" NHDOT HOT MIX BITUMINOUS
PAVEMENT - ½" WEARING COURSE
2 ½" NHDOT HOT MIX BITUMINOUS
PAVEMENT - ¾" BINDER COURSE (TYP)
(ITEM M-600-1 & M-600-2)



TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

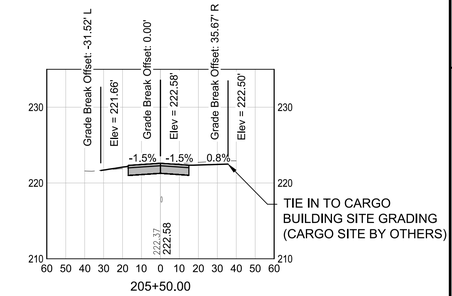
INSTALL NEW 15" RCP

204+00.00



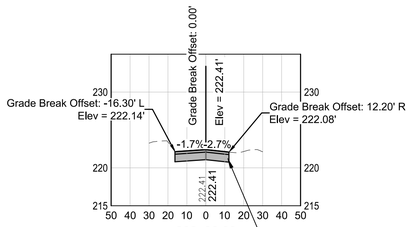
TIE IN TO CARGO
BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

206+00.00



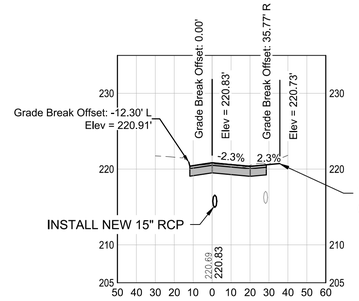
TIE IN TO CARGO
BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

205+50.00



202+30.00

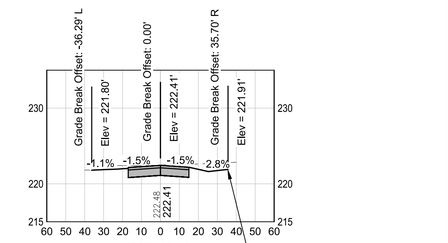
12" IN-PLACE RECYCLED ASPHALT
AGGREGATE BASE COURSE (TYP)
(ITEMS M-800-1 & M-800-2)



TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

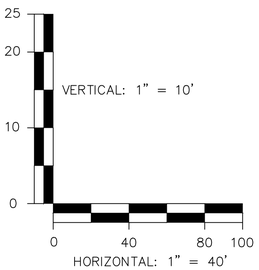
INSTALL NEW 15" RCP

203+50.00



205+00.00

TIE IN TO CARGO
BUILDING SITE GRADING
(CARGO SITE BY OTHERS)



ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY: DPB
DRAWN BY: BRF
CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CROSS SECTIONS - BASE BID (1 OF 2)

SCALE: AS SHOWN
DATE: MARCH 2022

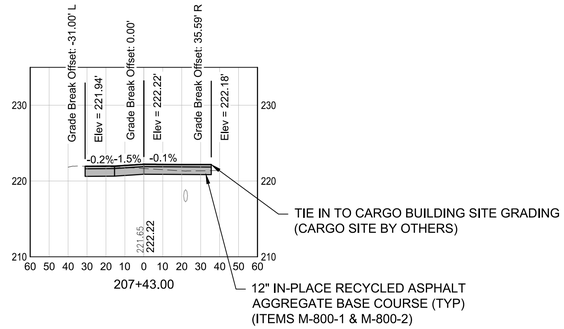
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

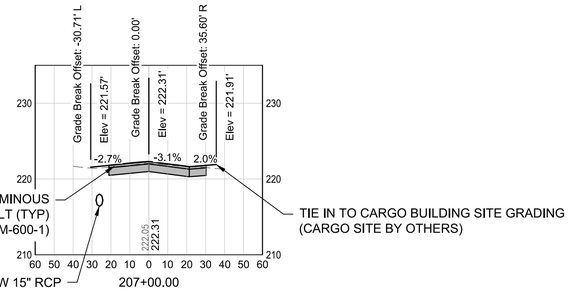
DRAWING NO.
XS-01

SHEET 85 OF 90
REV



TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

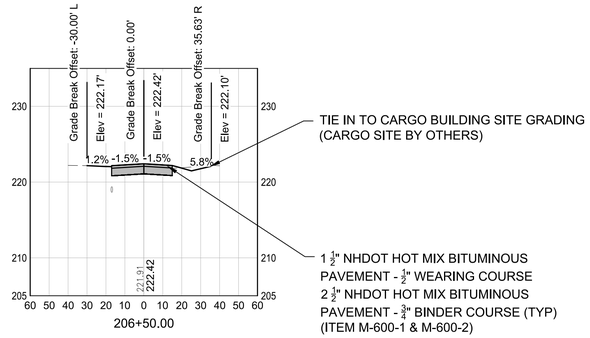
12" IN-PLACE RECYCLED ASPHALT
AGGREGATE BASE COURSE (TYP)
(ITEMS M-800-1 & M-800-2)



4" STATE MIX BITUMINOUS
ASPHALT (TYP)
(ITEM M-600-1)

INSTALL NEW 15" RCP

TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)



TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)

1 ½" NHDOT HOT MIX BITUMINOUS
PAVEMENT - ½" WEARING COURSE
2 ½" NHDOT HOT MIX BITUMINOUS
PAVEMENT - ¾" BINDER COURSE (TYP)
(ITEM M-600-1 & M-600-2)

ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

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53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY: DPB | DRAWN BY: BRF | CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CROSS SECTIONS - BASE BID (2 OF 2)

SCALE: AS SHOWN
DATE: MARCH 2022

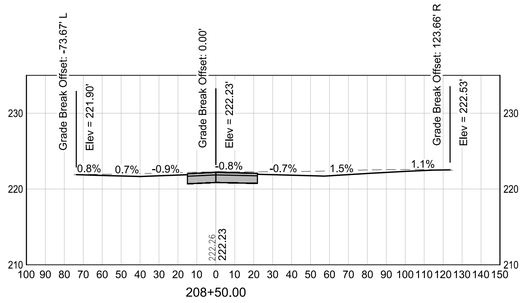
REVISIONS

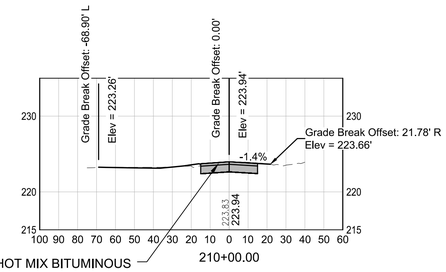
REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

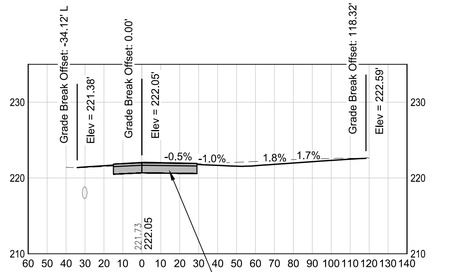
DRAWING NO.
XS-02

SHEET 86 OF 90
REV

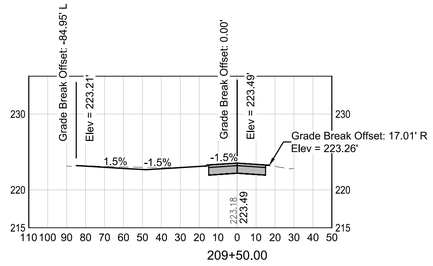


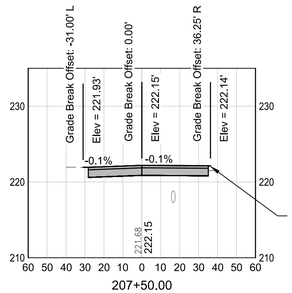


1 ½" NHDOT HOT MIX BITUMINOUS PAVEMENT - ¾" WEARING COURSE
2 ½" NHDOT HOT MIX BITUMINOUS PAVEMENT - ¾" BINDER COURSE (TYP)
(ITEM M-600-1 & M-600-2)

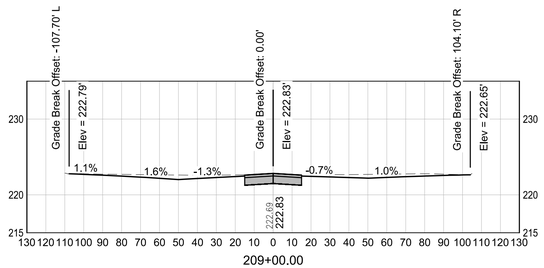


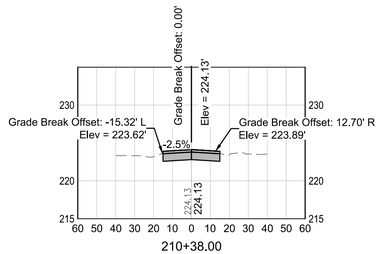
12" IN-PLACE RECYCLED ASPHALT AGGREGATE BASE COURSE (TYP)
(ITEMS M-800-1 & M-800-2)





TIE IN TO CARGO BUILDING SITE GRADING
(CARGO SITE BY OTHERS)





ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY: DPB | DRAWN BY: BRF | CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CROSS SECTIONS - ALT 1 (1 OF 1)

SCALE: AS SHOWN | DATE: MARCH 2022

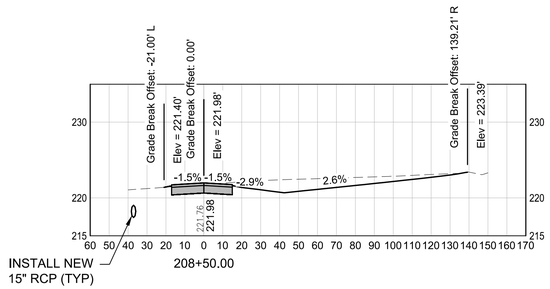
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

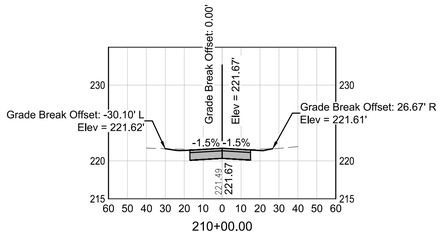
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

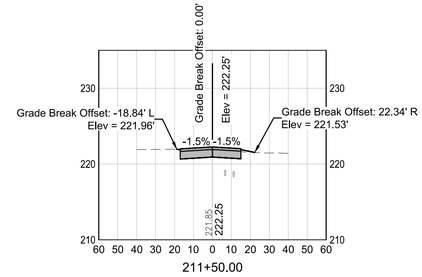
DRAWING NO.
XS-03

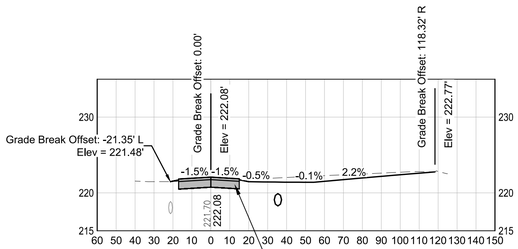
SHEET 87 OF 90
REV



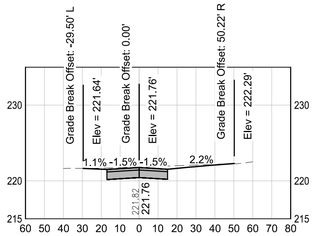
INSTALL NEW
15" RCP (TYP)

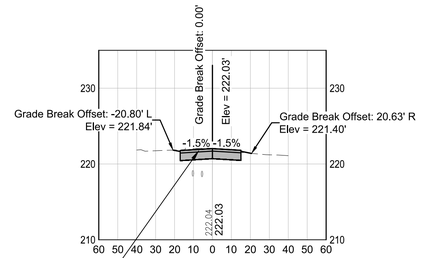




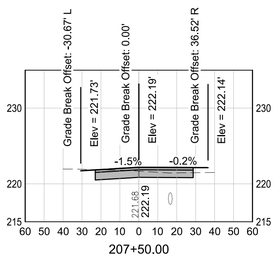


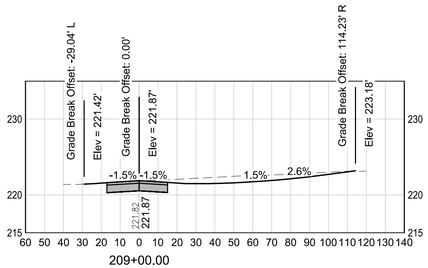
12" IN-PLACE RECYCLED ASPHALT
AGGREGATE BASE COURSE (TYP)
(ITEMS M-800-1 & M-800-2)

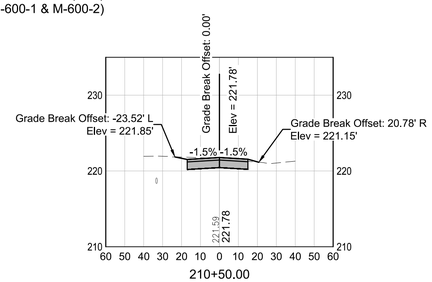




1 ½" NHDOT HOT MIX BITUMINOUS
PAVEMENT - ¾" WEARING COURSE
2 ½" NHDOT HOT MIX BITUMINOUS
PAVEMENT - ¾" BINDER COURSE (TYP)
(ITEM M-600-1 & M-600-2)







ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN
MICHAUD
No. 7416
LICENSED
PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

DESIGNED BY: DPB
DRAWN BY: BRF
CHECKED BY: BMB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CROSS SECTIONS – ALT 2 (1 OF 3)

SCALE: AS SHOWN
DATE: MARCH 2022

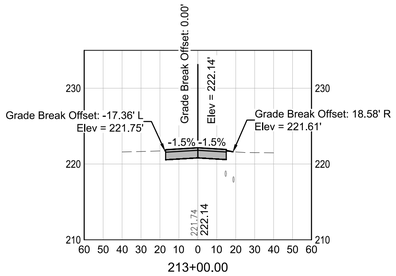
REVISIONS

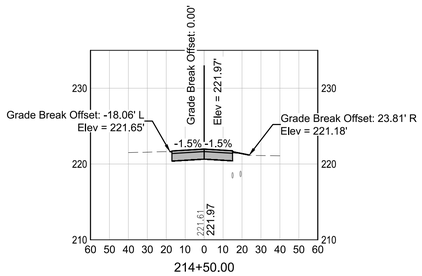
REV. NO.	DATE	DESCRIPTION	BY

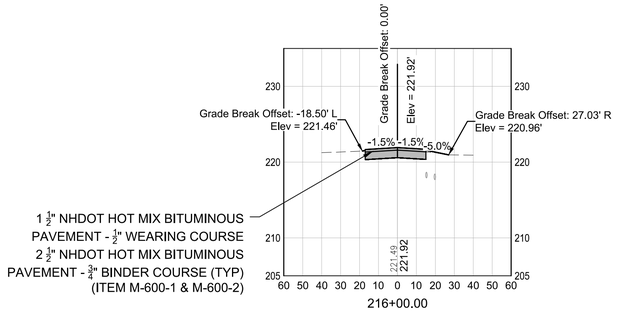
MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

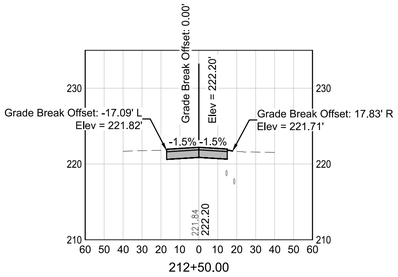
DRAWING NO.
XS-04

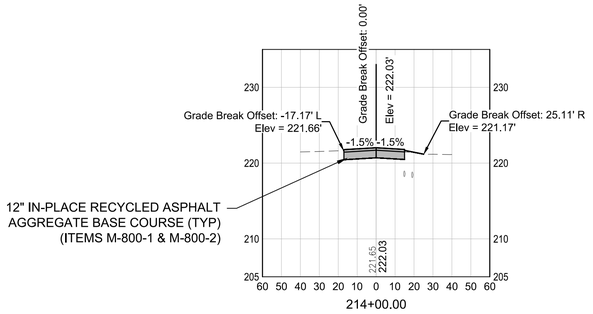
SHEET 88 OF 90
REV

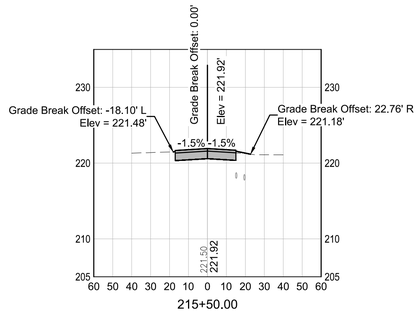


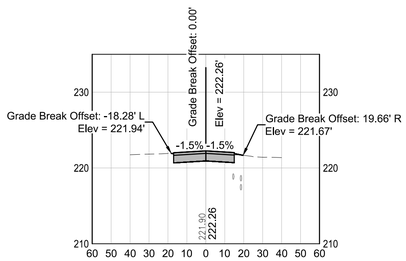


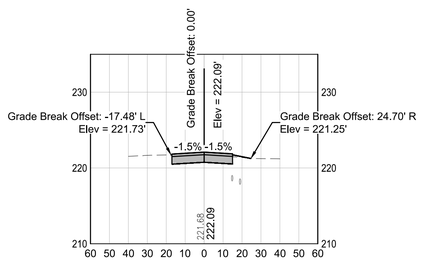


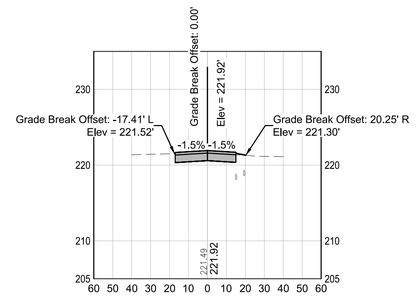












ENGINEER'S SEAL
THE STATE OF NEW HAMPSHIRE
BRIAN M. BURNETT
No. 7416
LICENSED PROFESSIONAL ENGINEER

PROJECT DESIGNER
McFarland Johnson
53 REGIONAL DRIVE, CONCORD, NH 03301-5022
PH: 603-225-2978 FAX: 603-225-0095

CHECKED BY: BMB
DRAWN BY: BRF
DESIGNED BY: DPB

CITY OF MANCHESTER
DEPARTMENT OF AVIATION
MANCHESTER, NEW HAMPSHIRE

MANCHESTER-BOSTON REGIONAL AIRPORT
CARGO APRON AND ACCESS

CROSS SECTIONS - ALT 2 (2 OF 3)

SCALE: AS SHOWN
DATE: MARCH 2022

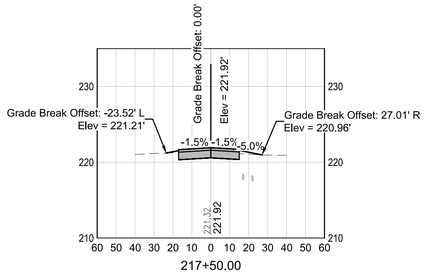
REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

MJ PROJ. No.: 18700.08
FILE NAME:
AIP No.: 3-33-0011-XXX-2021

DRAWING NO.
XS-05

SHEET 89 OF 90
REV



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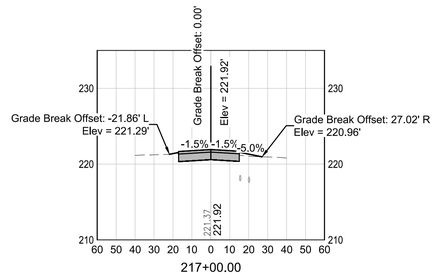

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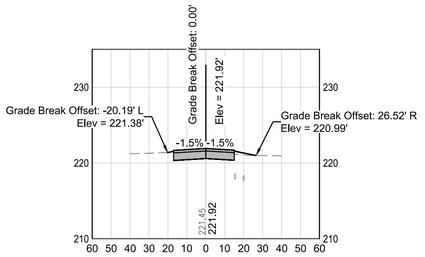

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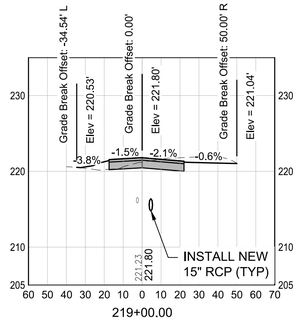

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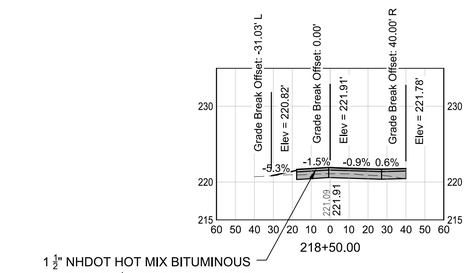
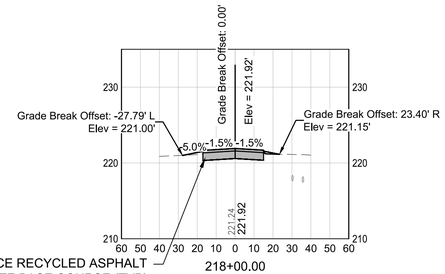


218+50.00

1 ½" NHDOT HOT MIX BITUMINOUS PAVEMENT - ½" WEARING COURSE
2 ½" NHDOT HOT MIX BITUMINOUS PAVEMENT - ¾" BINDER COURSE (TYP)
(ITEM M-600-1 & M-600-2)



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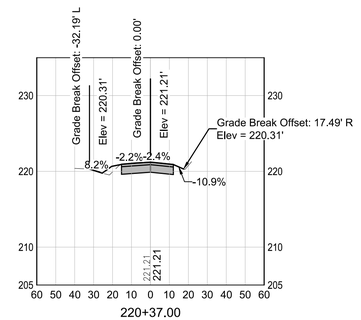
12" IN-PLACE RECYCLED ASPHALT AGGREGATE BASE COURSE (TYP)
(ITEMS M-800-1 & M-800-2)



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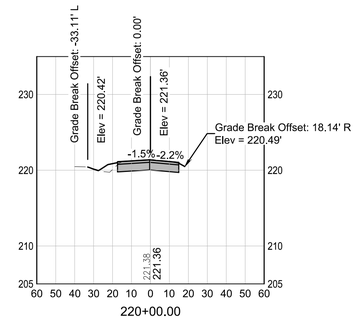

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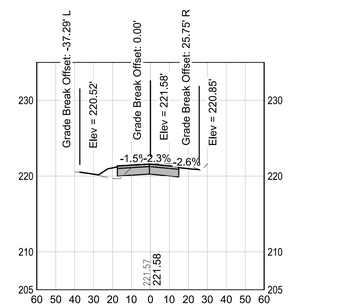

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