RALPH M HALL - ROCKWALL MUNICIPAL AIRPORT

PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

TxDOT CSJ NO. 1818ROCKW

AUGUST 2017

PARKHILL SMITH & COOPER

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Austin, Texas 78727
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PSC
PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
DEREK W. MAYO
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LICENSED
PROFESSIONAL ENGINEER
08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT
PAVEMENT REHABILITATION
& DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

KEY PLAN

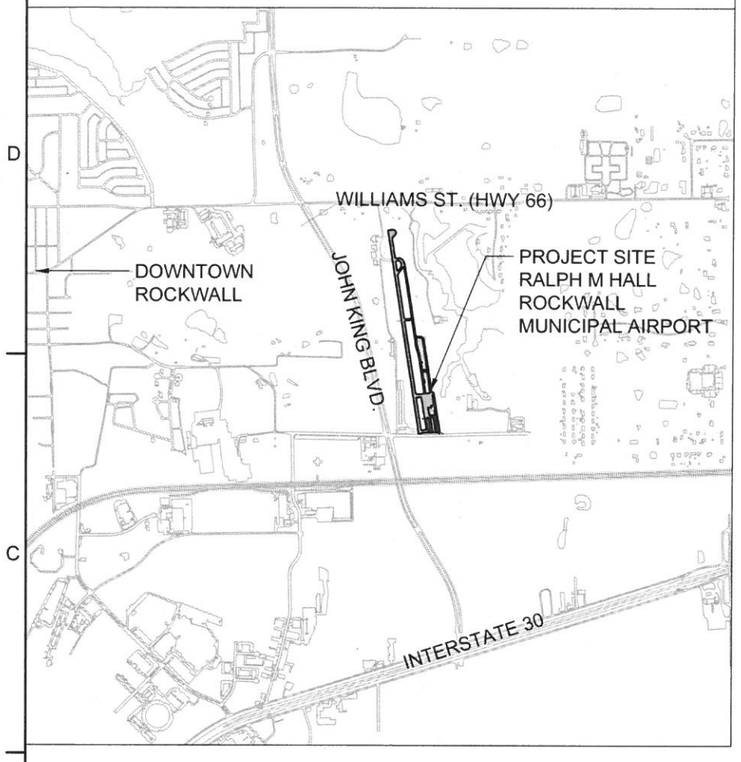
NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

COVER SHEET

G-001

VICINITY MAP



QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
	BASE BID: AIRFIELD PAVEMENT REHABILITATION AND DRAINAGE IMPROVEMENTS		
1	Item 105 Mobilization	1	LS
2	Item 105 Temporary Barricades and Markings for Pavement Closures	1	LS
3	Item P-101 Crack Sealing	32000	LF
4	Item P-152 Unclassified Excavation (Drainage Swales)	20	CY
5	Item P-156 Temporary Air and Water Pollution, Soil Erosion and Siltation Control	1	LS
6	Item P-620, Runway and Taxiway Marking	14620	SF
7	Item P-631 Refined Coal Tar Emulsion with Additives for Slurry Coat	39000	SY
8	Item D-701 12 inch Class V RCP	51	LF
9	Item D-701 18 inch Class III RCP	132	LF
10	Item D-751 Catch Basin	2	EA
11	Adjust Sanitary Sewer Utility Pipe, If needed	1	LS
12	Item D-752 Safety End Treatment	3	EA
13	Item Tx 164 Permanent Urban Seeding, Fertilizing, and Mulching (Dallas District)	4487	SY
14	Item Tx 351 Flexible Pavement Structure Repair	670	SY
15	Item Tx 351 Flexible Pavement Structure Repair (Apron Entrance Widening)	64	SY
16	Item Tx 672 Green Reflectorized 2 way Raised Pavement Markers DMS-4200 (Taxiway Centerline)	105	EA
	ADDITIVE ALTERNATE 1A: ENTRANCE ROAD RECONSTRUCTION HMAC		
BA1A-01	Item P-152 Unclassified Excavation (For Road Widening and Drainage Swale)	165	CY
BA1A-02	Item Tx 310, Prime Coat, including herbicidal treatment	500	GAL
BA1A-03	Item D-752 Concrete drainage gutter	34	SY
BA1A-04	Item Tx 247 Flexible Base Complete in Place (Type D, Grade 1-2, 8 inch Depth) (For Widening)	290	SY
BA1A-05	Item Tx 247 Flexible Base Complete in Place (Type D, Grade 1-2) (To supplement recycled base)	93	CY
BA1A-06	Item Tx 275 Cement for Base Cement Treatment (4%)	27	Ton
BA1A-07	Item Tx 275 Pulverization and Cement Treatment (Existing Material 8" Depth)	1780	SY
BA1A-08	Item Tx 340 Dense Graded Hot-Mix Asphalt (SQ, 3 in.) SAC C, PG 64-22	280	Ton
	ADDITIVE ALTERNATE 1B: ENTRANCE ROAD RECONSTRUCTION PCC		
BA1B-01	Item P-152 Unclassified Excavation (For Road Widening and Drainage Swale)	340	CY
BA1B-02	Item D-752 Concrete drainage gutter	34	SY
BA1B-03	Item Tx 247 Flexible Base Complete in Place (Type D, Grade 1-2,6 inch Depth) (For Widening)	290	SY
BA1B-04	Item Tx 251 Pulverization and Rework Existing Asphalt and Base Course (Type C, 8 in. Depth)	1500	SY
BA1B-05	Item Tx 360 Concrete Pavement (7" Depth)	1730	SY

Sheet Index

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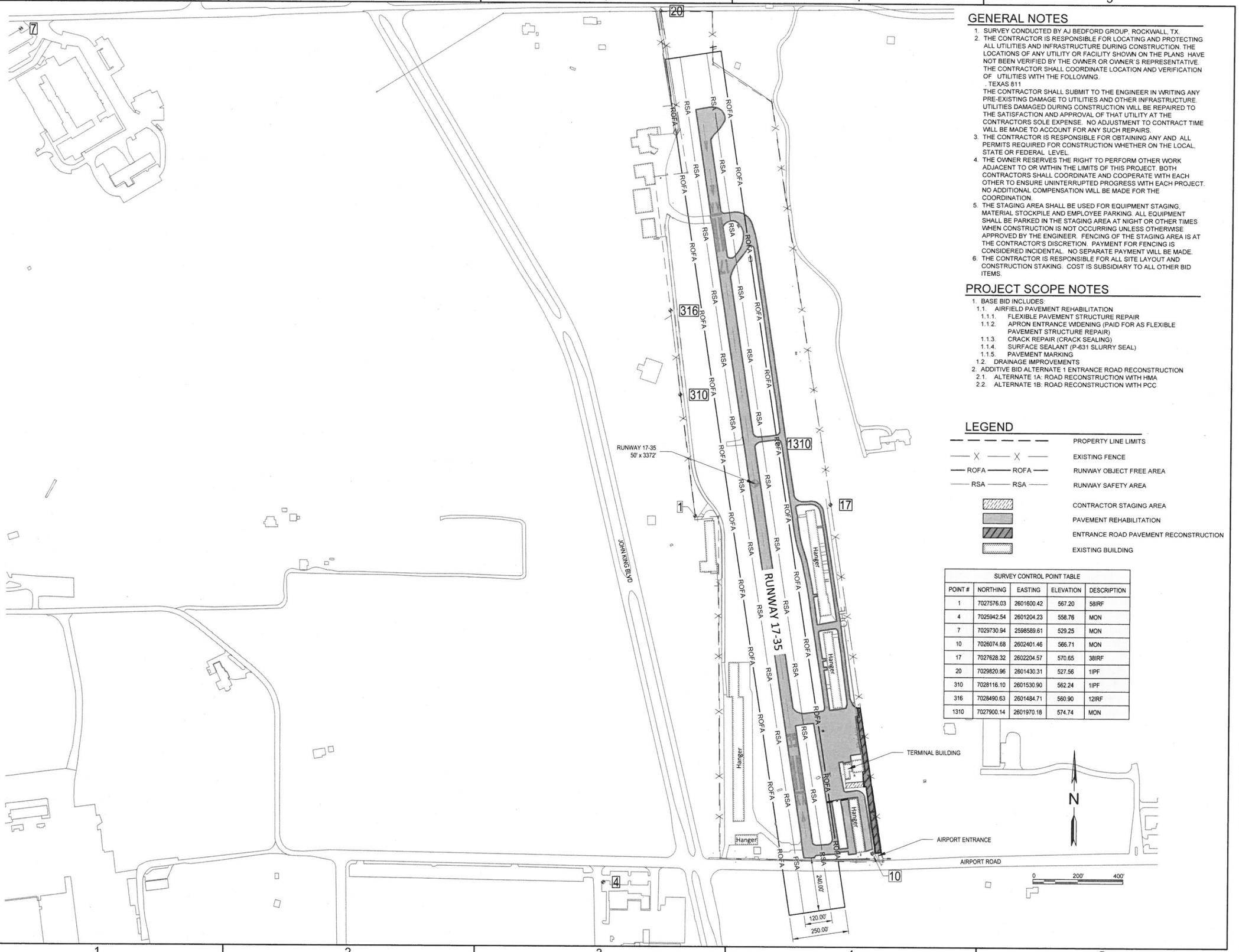
SHEET INDEX & VICINITY MAP

G-002



GENERAL NOTES

1. SURVEY CONDUCTED BY AJ BEDFORD GROUP, ROCKWALL, TX.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES AND INFRASTRUCTURE DURING CONSTRUCTION. THE LOCATIONS OF ANY UTILITY OR FACILITY SHOWN ON THE PLANS HAVE NOT BEEN VERIFIED BY THE OWNER OR OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL COORDINATE LOCATION AND VERIFICATION OF UTILITIES WITH THE FOLLOWING.
   TEXAS 811
   THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER IN WRITING ANY PRE-EXISTING DAMAGE TO UTILITIES AND OTHER INFRASTRUCTURE. UTILITIES DAMAGED DURING CONSTRUCTION WILL BE REPAIRED TO THE SATISFACTION AND APPROVAL OF THAT UTILITY AT THE CONTRACTORS SOLE EXPENSE. NO ADJUSTMENT TO CONTRACT TIME WILL BE MADE TO ACCOUNT FOR ANY SUCH REPAIRS.
3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS REQUIRED FOR CONSTRUCTION WHETHER ON THE LOCAL, STATE OR FEDERAL LEVEL.
4. THE OWNER RESERVES THE RIGHT TO PERFORM OTHER WORK ADJACENT TO OR WITHIN THE LIMITS OF THIS PROJECT. BOTH CONTRACTORS SHALL COORDINATE AND COOPERATE WITH EACH OTHER TO ENSURE UNINTERRUPTED PROGRESS WITH EACH PROJECT. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THE COORDINATION.
5. THE STAGING AREA SHALL BE USED FOR EQUIPMENT STAGING, MATERIAL STOCKPILE AND EMPLOYEE PARKING. ALL EQUIPMENT SHALL BE PARKED IN THE STAGING AREA AT NIGHT OR OTHER TIMES WHEN CONSTRUCTION IS NOT OCCURRING UNLESS OTHERWISE APPROVED BY THE ENGINEER. FENCING OF THE STAGING AREA IS AT THE CONTRACTOR'S DISCRETION. PAYMENT FOR FENCING IS CONSIDERED INCIDENTAL. NO SEPARATE PAYMENT WILL BE MADE.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL SITE LAYOUT AND CONSTRUCTION STAKING. COST IS SUBSIDIARY TO ALL OTHER BID ITEMS.

PROJECT SCOPE NOTES

1. BASE BID INCLUDES:
   - 1.1. AIRFIELD PAVEMENT REHABILITATION
     - 1.1.1. FLEXIBLE PAVEMENT STRUCTURE REPAIR
     - 1.1.2. APRON ENTRANCE WIDENING (PAID FOR AS FLEXIBLE PAVEMENT STRUCTURE REPAIR)
     - 1.1.3. CRACK REPAIR (CRACK SEALING)
     - 1.1.4. SURFACE SEALANT (P-631 SLURRY SEAL)
     - 1.1.5. PAVEMENT MARKING
   - 1.2. DRAINAGE IMPROVEMENTS
2. ADDITIVE BID ALTERNATE 1 ENTRANCE ROAD RECONSTRUCTION
   - 2.1. ALTERNATE 1A: ROAD RECONSTRUCTION WITH HMA
   - 2.2. ALTERNATE 1B: ROAD RECONSTRUCTION WITH PCC

LEGEND

- PROPERTY LINE LIMITS
- EXISTING FENCE
- RUNWAY OBJECT FREE AREA
- RUNWAY SAFETY AREA
- CONTRACTOR STAGING AREA
- PAVEMENT REHABILITATION
- ENTRANCE ROAD PAVEMENT RECONSTRUCTION
- EXISTING BUILDING

SURVEY CONTROL POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	7027576.03	2601600.42	567.20	5IRF
4	7025942.54	2601204.23	558.76	MON
7	7029730.94	2598589.61	529.25	MON
10	7026074.68	2602401.46	566.71	MON
17	7027628.32	2602204.57	570.65	3IRF
20	7029820.96	2601430.31	527.56	1IPF
310	7028116.10	2601530.90	562.24	1IPF
316	7028490.63	2601484.71	560.90	12IRF
1310	7027900.14	2601970.18	574.74	MON

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ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

PROJECT LAYOUT PLAN

G-003

SITE DESCRIPTION

PROJECT SITE: *RALPH M HALL ROCKWALL MUNICIPAL AIRPORT, ROCKWALL, TX*

PROJECT DESCRIPTION: *The project is described as follows: AIRFIELD PAVEMENT REHABILITATION AND DRAINAGE IMPROVEMENTS*

MAJOR SOIL DISTURBING ACTIVITIES:
SUBGRADE PREPARATION FOR ENTRANCE ROAD WIDENING (APPROX. 2300 SF)
DRAINAGE EXCAVATION IN UNPAVED AREAS (APPROX. 500 SF)

TOTAL PROJECT AREA: *8.45 ACRES*

TOTAL AREA TO BE DISTURBED: *0.08 ACRES*

SCS CURVE NUMBER (BEFORE CONSTRUCTION): *98*
(AFTER CONSTRUCTION): *98*

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: *EXISTING PROJECT AREA IS FULLY PAVED EXCEPT FOR AREAS WHERE NEW PIPES WILL BE INSTALLED IN UNPAVED AREAS AND FOR ENTRANCE ROAD WIDENING. THOSE AREAS ARE CURRENTLY VEGETATED WITH GRASS COVER.*

NAME OF RECEIVING WATERS: *THE RUNWAY AND AIRFIELD ARE GENERALLY FLAT, APPROXIMATELY HALF OF THE AIRFIELD DRAINS TO THE SOUTH, AND ROUGHLY HALF FLOWS TOWARDS THE NORTH. THE ONLY DISTURBED AREAS ARE IN THE SOUTHERN DRAINAGE PATTERN, WHICH FLOWS TO A ROADSIDE DRAINAGE DITCH ALONG JOHN KING BLVD.*

GENERAL NOTES:

1. *In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease and the engineer will contact professional archeologist to initiate post-review discovery procedures under the provisions of 36 CFR 800.13.*
2. *In the event that unanticipated hazardous materials are encountered during construction, work in the immediate area will cease and the engineer and airport operations will be notified.*
3. *Stockpiles will not be placed within any water of the United States, including wetlands.*
4. *Inspection: This must occur either:*
   a. *Once a month during dry season.*
   b. *Every 7 days during wet season, and 24 hours after each 0.5 inch rain, or greater, or once a month if there is no rainfall.*
   d. *Hazardous waste: All spills must be reported immediately to the engineer.*
   e. *Off Site Tracking: Please check all four options.*
5. *Contractor to maintain all haul routes and have sufficient equipment in the form of water trucks for dust control on said haul routes.*

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- [X] TEMPORARY SEEDING
- [X] PERMANENT PLANTING, SODDING, OR SEEDING
- [X] MULCHING
- [ ] SOIL RETENTION BLANKET
- [ ] BUFFER ZONES
- [ ] PRESERVATION OF NATURAL RESOURCES

OTHER: *Upon completion of final grading the contractor will be required to re-establish grass cover in any area disturbed during construction.*

STRUCTURAL PRACTICES:

- [X] SILT FENCES
- [ ] HAY BALES
- [ ] ROCK BERMS
- [ ] DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- [ ] DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- [ ] DIVERSION DIKE AND SWALE COMBINATIONS
- [ ] PIPE SLOPE DRAINS
- [ ] PAVED FLUMES
- [ ] ROCK BEDDING AT CONSTRUCTION EXIT
- [ ] TIMBER MATTING AT CONSTRUCTION EXIT
- [ ] CHANNEL LINERS
- [ ] SEDIMENT TRAPS
- [ ] SEDIMENT BASINS
- [ ] STORM INLET SEDIMENT TRAP
- [X] STONE OUTLET STRUCTURES
- [ ] CURBS AND GUTTERS
- [ ] STORM SEWERS
- [ ] VELOCITY CONTROL DEVICES

OTHER: *Sand bags, sediment control logs*

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:
The order of activities will be as follows:

1. *Install sediment controls; silt fences (minimum) and other devices as required to meet TCEQ and EPA requirements.*
2. *Demolish existing and construct new improvements associated with the project*
3. *Where applicable, install additional erosion control devices.*
4. *When all construction activity is complete and the site is approved by the Engineer, and after preconstruction and cover conditions are re-established, remove all temporary sediment controls.*

STORM WATER MANAGEMENT: *During construction, measures will be implemented by the contractor to help reduce sediment leaving the site. Measures will be selectively placed to achieve maximum containment of disturbed soil. The contractor will be allowed to adjust erosion control measures as necessary to meet full requirements of the contractor - prepared SWPP.*

MIGRATORY BIRD TREATY ACT: *If there is a burrowing owl on the nest, and that female does not leave the nest when approached, assume there are eggs or chicks in the hole regardless of the time of year. No work may occur within 100 feet of an active nest. The active nest(s) must be protected by orange mesh safety fencing.*

The federal migratory bird treaty act (mbta) (16 usc 703-711.), 50 cfr 10, and fish & game code 3503, 3513, and 3800, protect migratory and nongame birds, their occupied nests, and their eggs. in the event that migratory birds are encountered onsite during project construction from february 15 to october 1, the superintendent working on the project must take reasonable care to avoid impacts to protected birds, active nests, eggs and/or the young. a person that violates the mbta may be held strictly liable for actions that result in unpermitted take. when migratory bird nests are discovered which may be adversely affected by construction activity, or when a bird is found injured or killed as a result of construction activity, immediately stop work within 50 feet of the nest or bird and notify the rpr/engineer/ and owner.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: *All erosion and sediment controls shall be maintained in good working order by the contractor. If a repair is necessary, it shall be done at the earliest date possible. The areas adjacent to creeks and drainage ways shall have priority followed by devices used for silt reduction in the disturbed areas.*

INSPECTION: *An inspection shall be performed by the contractor every 7 days as well as 24 hours after every half-inch or more of rain (as recorded on a rain guage located at the project site). An inspection report shall be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report.*
An inspection shall be performed by the contractor daily of all sediment controls adjacent to any active runway or taxiway to insure all controls are securely in place and not at risk of becoming FOD.

WASTE MATERIALS: *All waste materials shall be collected and stored in a securely lidded metal dumpster. The dumpster shall meet all state and local solid waste management regulations. All trash and construction debris from the site shall be deposited in the dumpster. The dumpster shall be emptied as necessary or as required by local regulations at an approved landfill. No construction waste material shall be buried on site.*

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): *At a minimum, any products in the following categories are considered to be hazardous: petroleum, oils, lubricants, paints, acids for cleaning masonary surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization, petroleums, oils, lubricants, and concrete curing compounds and additives. In the event of a spill, which may be hazardous, the Contractor shall contact the appropriate agency for such type spills immediately.*

SANITARY WASTE: *All sanitary waste will be collected from the portable units by a licensed sanitary waste management contractor as necessary or as required by local regulation.Sanitary waste containers shall be secured to prevent disturbance by wind.*

OFFSITE VEHICLE TRACKING:

- [X] HAUL ROADS AND STAGING AREA DAMPENED FOR DUST CONTROL
- [X] LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- [X] EXCESS DIRT ON PAVED SURFACES REMOVED DAILY
- [ ] STABILIZED CONSTRUCTION ENTRANCE

OTHER: *Contractor to determine when it is necessary to cover haul trucks with a tarpaulin.*

REMARKS: *Staging areas, stockpiles, and haul roads shall be constructed in a manner that will minimize the amount of sediment that may enter receiving waters. Staging areas shall not be located in any wetlands, waterbody or streambeds. Construction staging areas and vehicle maintenance areas shall be constructed by the contractor in a manner to minimize the runoff of pollutants. All waterways shall be cleared as soon as practical of temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work. The Contractor shall be responsible for implementing the necessary pollution protection controls necessary to meet TCEQ and EPA requirements.*

CONTRACTOR:

SUBCONTRACTOR:

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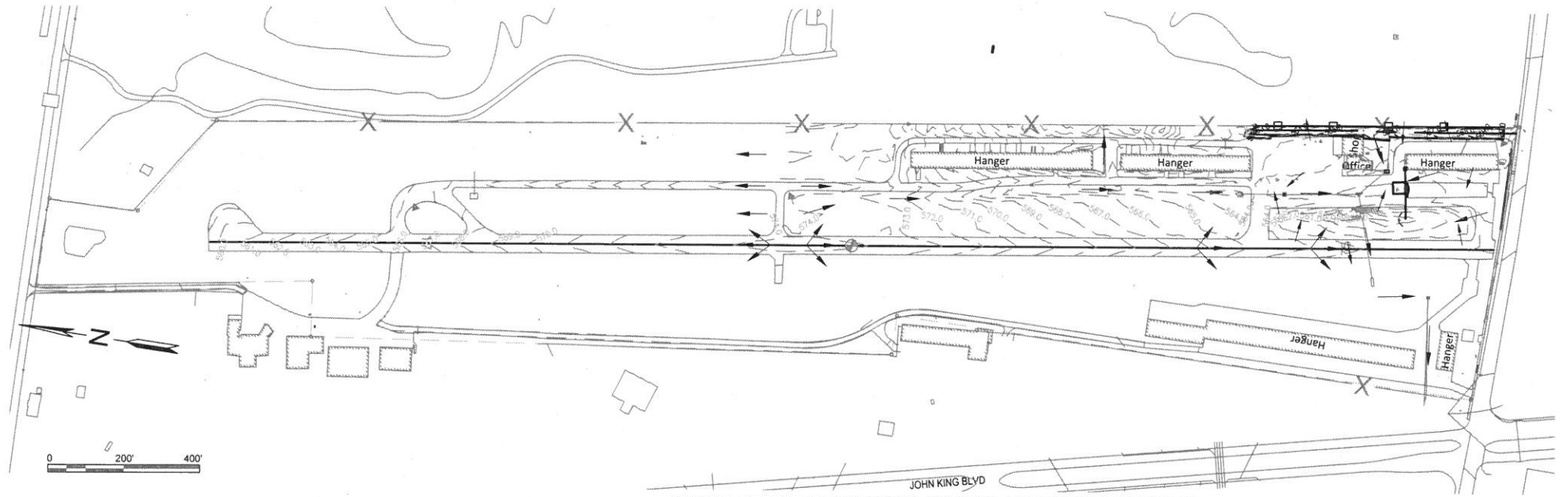
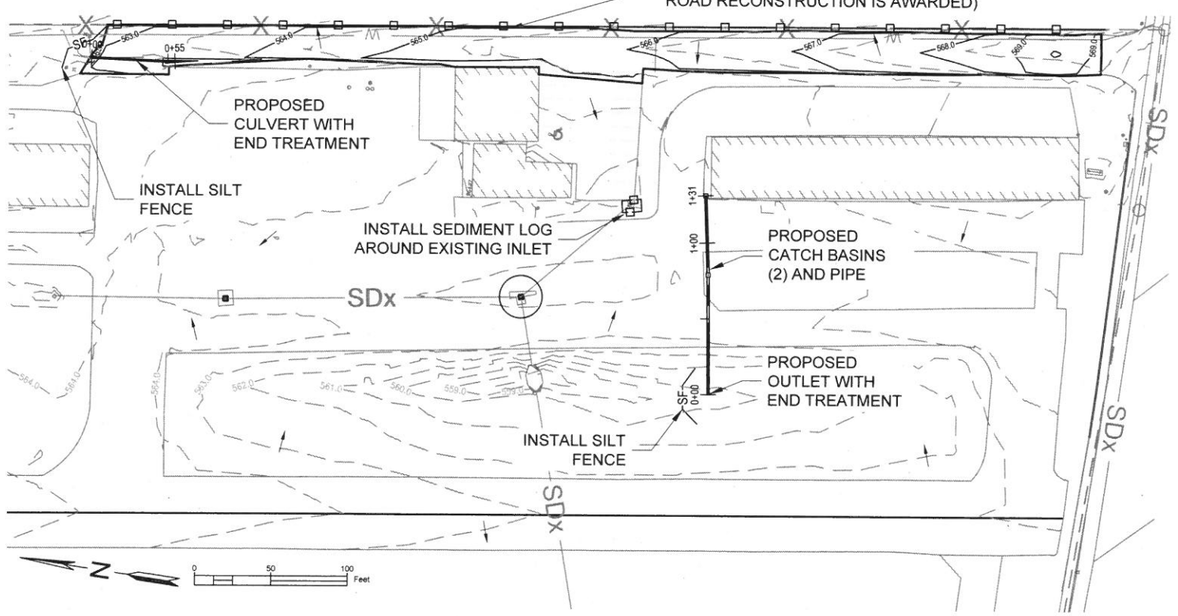
STORMWATER POLLUTION PREVENTION PLAN

G-004



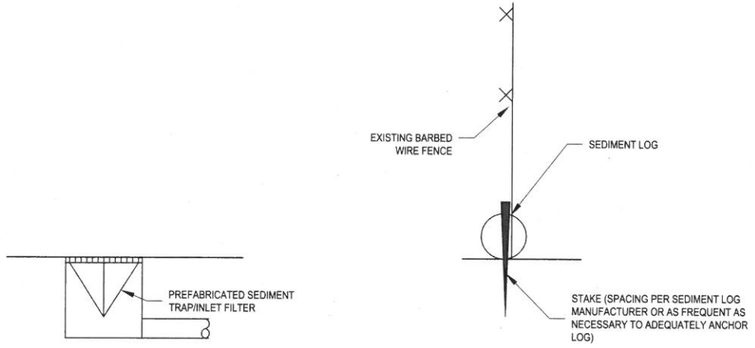


GENERAL NOTES

A. SEE SHEET G-004 FOR NOTES.

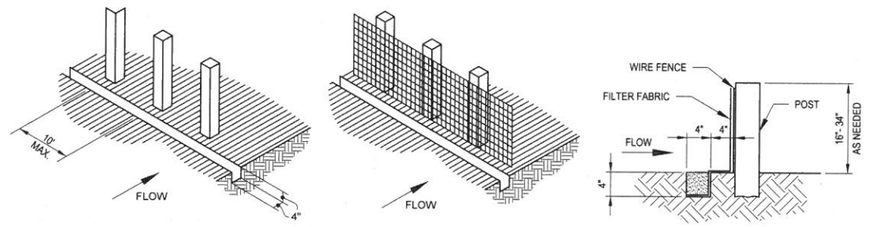
LEGEND

- PROPERTY LINE LIMITS
- PROPERTY LINE LIMITS
- SDx — EXISTING STORM PIPE
- PROPOSED STORM PIPE
- 500.0 — EXISTING CONTOUR
- 500.0 — PROPOSED CONTOUR
- SF — SILT FENCE PER A4 THIS SHEET
- PAVEMENT WIDENING
- PAVEMENT REHABILITATION
- PAVEMENT RECONSTRUCTION
- EXISTING BUILDING
- FLOW ARROW
- INSTALL TEMPORARY INLET FILTER FOR INLET PROTECTION
- INSTALL SEDIMENT LOG



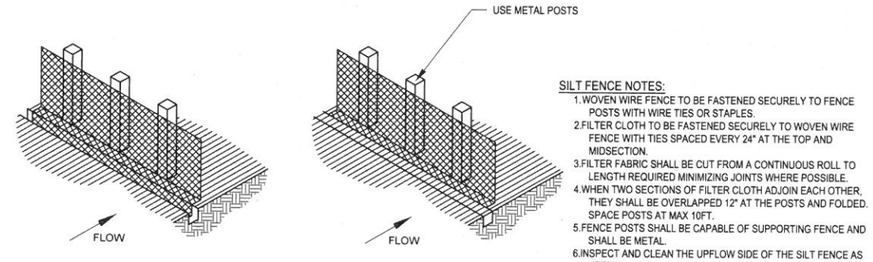
A1 INLET FILTER
NO SCALE

A2 SEDIMENT LOG
NO SCALE



1. SET POSTS AND EXCAVATE 4" x 4" TRENCH UPSLOPE ALONG LINE OF POSTS.
2. SECURE WIRE FENCING TO POSTS.

EXTENSION OF FILTER FABRIC INTO 4" X 4" TRENCH.



3. ATTACH FILTER MATERIAL TO WIRE FENCE AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOD.

A4 SILT FENCE
NO SCALE

SILT FENCE NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MIDSECTION.
3. FILTER FABRIC SHALL BE CUT FROM A CONTINUOUS ROLL TO LENGTH REQUIRED MINIMIZING JOINTS WHERE POSSIBLE.
4. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED 12" AT THE POSTS AND FOLDED. SPACE POSTS AT MAX 10FT.
5. FENCE POSTS SHALL BE CAPABLE OF SUPPORTING FENCE AND SHALL BE METAL.
6. INSPECT AND CLEAN THE UPFLOW SIDE OF THE SILT FENCE AS NEEDED.
7. REMOVE THE SILT FENCE AND RESTORE THE SITE ONCE REQUIREMENTS OF SWPPP ARE MET AND PRIOR TO FINAL PAYMENT BEING RELEASED TO CONTRACTOR.

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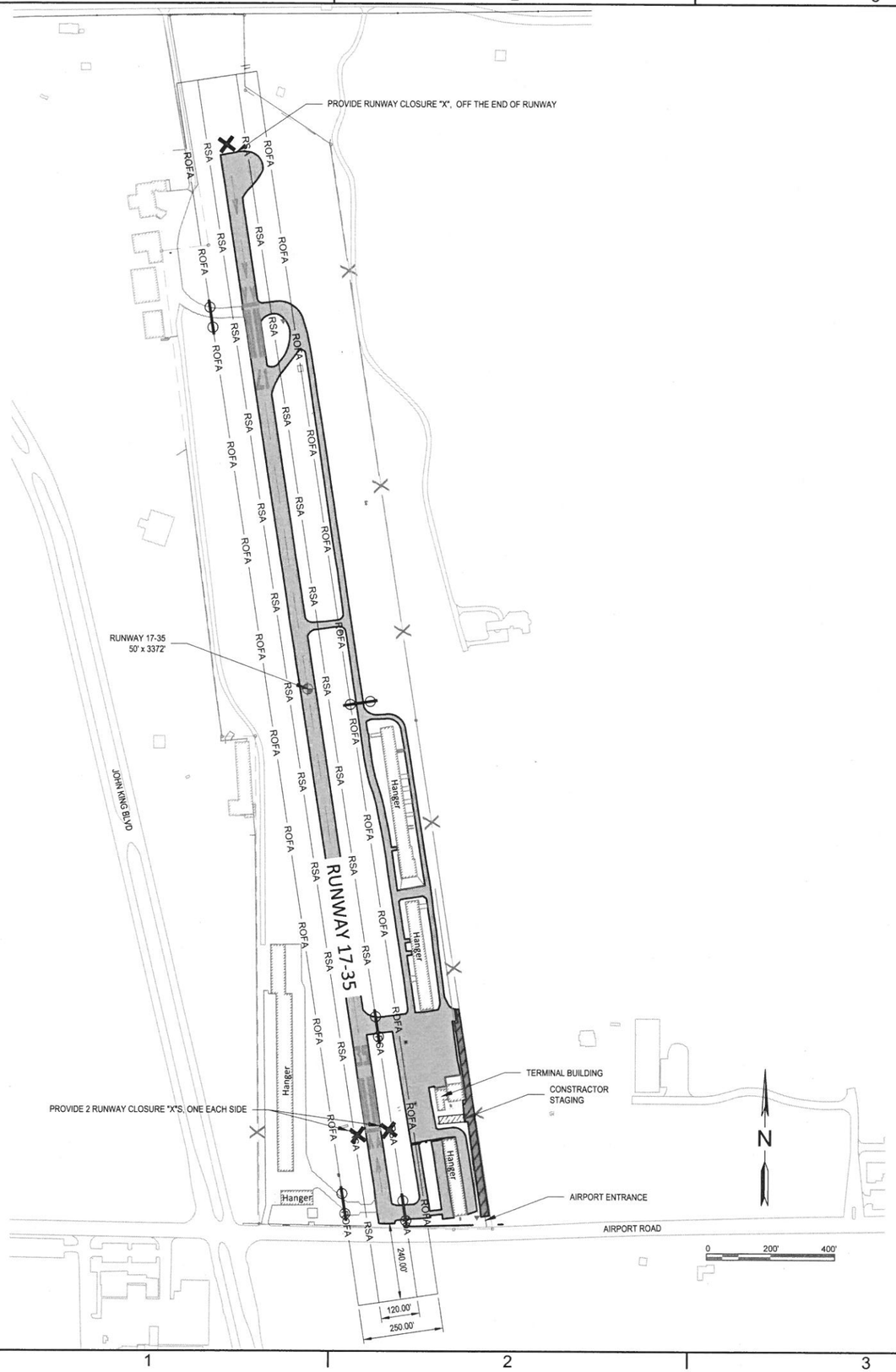
STORMWATER POLLUTION PREVENTION PLAN SITE MAP AND DETAILS

G-005



GENERAL NOTES

A. ANY WORK WITHIN THE RUNWAY OBJECT FREE AREA (ROFA) REQUIRES A RUNWAY CLOSURE. PROVIDE ENGINEER WITH MINIMUM 14 DAYS NOTICE FOR A RUNWAY CLOSURE.
B. THE CONTRACTOR SHALL MAINTAIN ALL ACTIVE AIRFIELD PAVEMENTS FREE OF CONSTRUCTION DEBRIS, FOREIGN OBJECT DEBRIS (FOD), EVEN SMALL PARTICLES CAN CAUSE DAMAGE TO AIRCRAFT. THOROUGHLY CLEAN PAVEMENT SURFACES PRIOR TO OPENING TO AIR TRAFFIC.
C. ALL OBJECTS INCLUDING EQUIPMENT AND MATERIAL STOCKPILES MUST BE OUTSIDE THE ACTIVE RUNWAY AND TAXIWAY OBJECT FREE AREAS. NO PARKING, STAGING, OR STOCKPILING WILL BE ALLOWED OUTSIDE THE AGREED STAGING AREAS OR AREAS CLOSED FOR CONSTRUCTION AND AT NO TIME BE ALLOWED TO BE LEFT INSIDE AN ACTIVE RUNWAY OR TAXIWAY OBJECT FREE AREA (OFA).
D. CONTRACTOR TO FURNISH RUNWAY CLOSURE "X"S (3 TOTAL).
E. CONTRACTOR SHALL KEEP AND MONITOR AT MINIMUM ONE TWO-WAY AVIATION RADIO ON SITE AT ALL TIMES TUNED INTO THE AIRPORT UNICOM FREQUENCY, 122.80.
F. MARK AND LIGHT CONSTRUCTION AREAS AND VEHICLES AS REQUIRED IN LATEST EDITION OF FAA ADVISORY CIRCULAR (AC) 150/5370-2.
G. AT ALL TIMES, CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT LIGHTING, SIGNAGE, FAA NAVIGATIONAL AIDS, AND ANY OTHER STRUCTURE WITHIN THE APPROVED WORK AREA OR ELSEWHERE. ANY DAMAGE CAUSED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED, TO THE SATISFACTION OF THE OWNER, AT THE CONTRACTORS SOLE COST.
H. USE TEMPORARY BARRICADES TO CLOSE SECTIONS OF TAXIWAY CLOSED FOR LOCALIZED WORK AT MAXIMUM 5 FOOT SPACING. QUANTITY OF BARRICADES, SPACING, AND LOCATIONS SHALL BE USED TO THE SATISFACTION OF THE ENGINEER TO CLEARLY DELINEATE WORK AREAS.
I. THE AIRPORT IS NOT SECURED WITH A PERIMETER FENCE. CONTRACTOR ON SITE STORAGE SHALL BE AT THE CONTRACTOR'S OWN RISK.
J. CONTRACTOR SHALL NOT LEAVE PORTIONS OF THE AIRPORT CLOSED THAT DO NOT NEED TO BE AND SHALL PHASE WORK TO ALLOW FOR MAXIMUM ACCESS TO THE AIRFIELD.

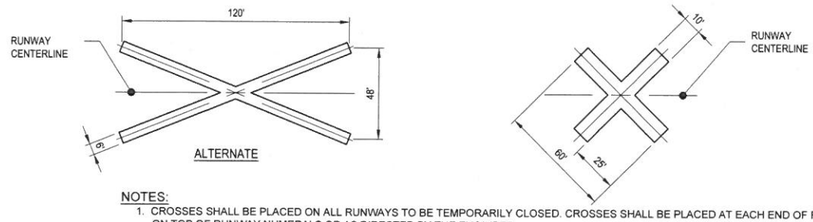
CONTRACT TIME NOTES

A. ALL WORK SHALL BE COMPLETED WITHIN 90 CALENDAR DAYS OF THE NOTICE TO PROCEED.
B. IF NEITHER ADDITIVE ALTERNATES ARE AWARDED, ALLOWED CONTRACT DAYS WILL BE REDUCED BY 15 CALENDAR DAYS.
C. THE RUNWAY WILL BE ALLOWED TO BE CLOSED FOR A MAXIMUM OF 14 CALENDAR DAYS FOR RUNWAY PAVEMENT REHABILITATION WORK AND 1ST COAT OF PAINT. AN ADDITIONAL 2 DAYS WILL BE ALLOWED FOR THE FINAL COAT OF PAINT FOR THE RUNWAY MARKINGS AFTER THE CURING PERIOD FOR THE SURFACE SEALANT.
D. IF WORK IS NOT COMPLETED WITHIN THESE REQUIREMENTS, LIQUIDATED DAMAGES WILL BE ASSESSED.

LEGEND

- PROPERTY LINE LIMITS
- EXISTING FENCE
- RUNWAY OBJECT FREE AREA
- RUNWAY SAFETY AREA
- CONTRACTOR STAGING AREA
- PAVEMENT REHABILITATION
- ENTRANCE ROAD PAVEMENT RECONSTRUCTION
- EXISTING BUILDING
- BARRICADE LOCATIONS FOR WHEN RUNWAY IS CLOSED. LOCATIONS WILL VARY BASED ON ACTIVE WORK AREA

B4 LOW RISE BARRICADE DETAIL
NO SCALE



NOTES:
1. CROSSES SHALL BE PLACED ON ALL RUNWAYS TO BE TEMPORARILY CLOSED. CROSSES SHALL BE PLACED AT EACH END OF RUNWAY ON TOP OF RUNWAY NUMERALS OR AS DIRECTED BY THE ENGINEER.
2. CROSSES SHALL BE CONSTRUCTED OF FABRIC, PLYWOOD OR SIMILAR MATERIAL.
3. CROSSES SHALL BE AVIATION YELLOW COLOR.
4. CONTRACTOR MAY OPT TO USE LIGHTED X'S DURING CLOSURE PERIOD. CONTRACTOR WILL BE RESPONSIBLE FOR TRANSPORTING, AND MAINTAINING LIGHTED X'S IN WORKING CONDITION. CONTRACTOR SHALL PROVIDE 2 GENERATORS AND SHALL BE RESPONSIBLE FOR FUELING AND ALL MAINTENANCE.

A4 CLOSED RUNWAY CROSSES
NO SCALE

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STATE OF TEXAS
DEREK W. MAYO
121115
LICENSED
PROFESSIONAL ENGINEER
08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

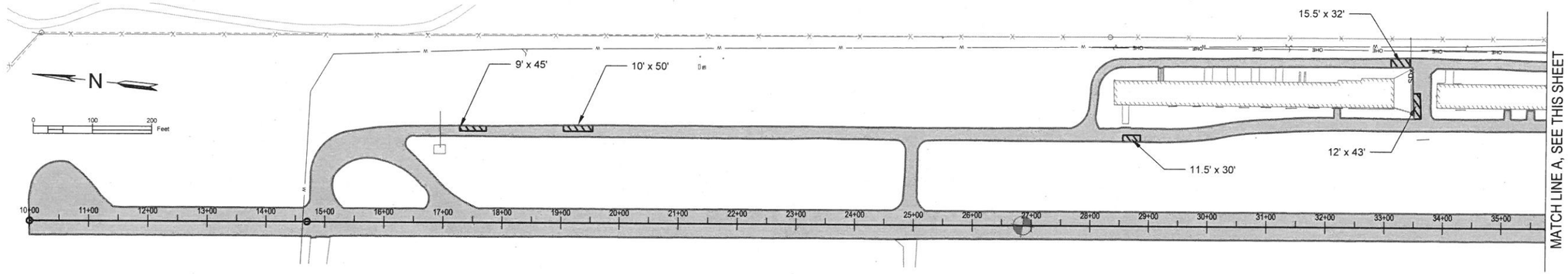
KEY PLAN

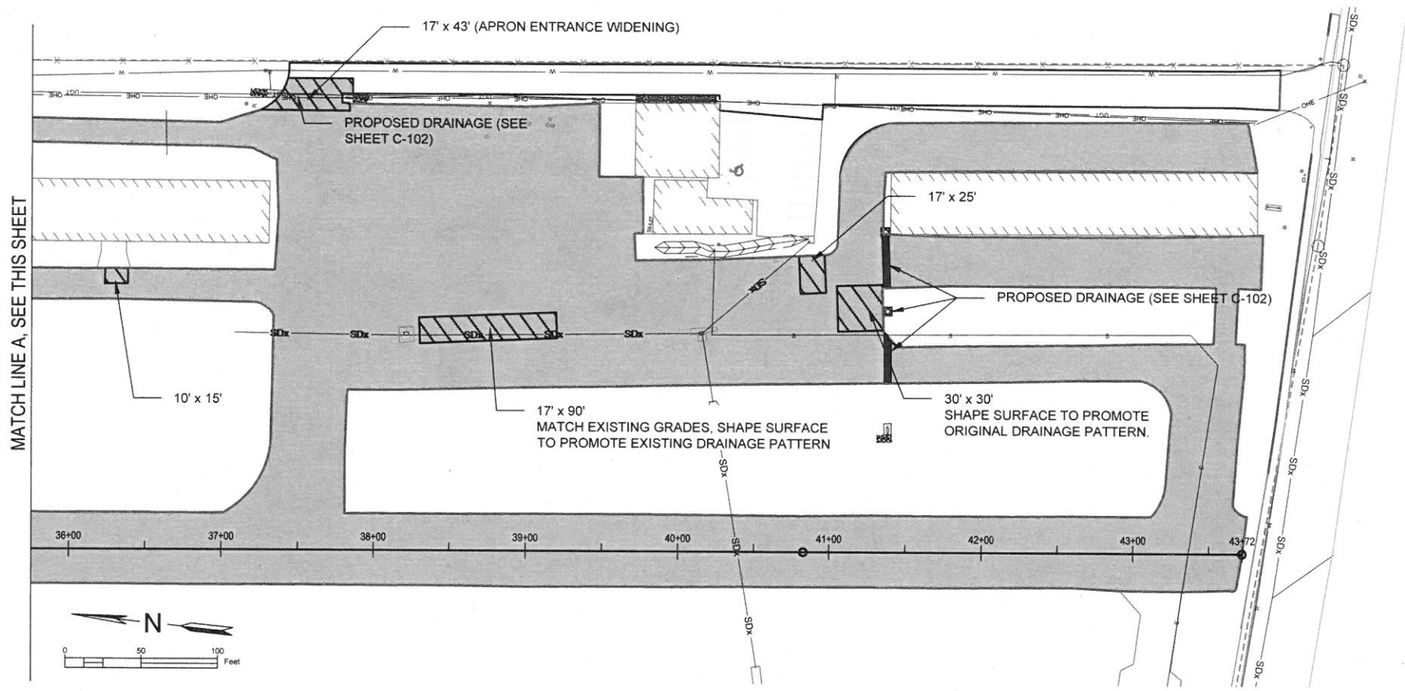
NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

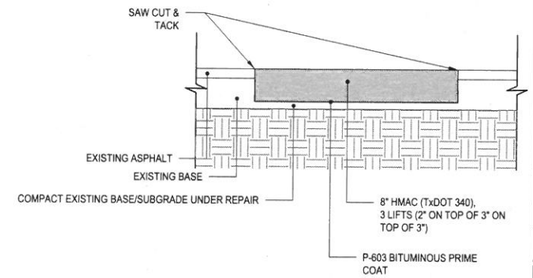
ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

CONSTRUCTION SAFETY AND PHASING PLAN

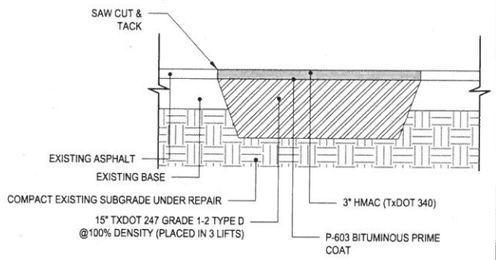
G-006







METHOD 2



METHOD 1

FLEXIBLE PAVEMENT STRUCTURAL REPAIR

B5 NO SCALE

GENERAL NOTES

A. CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING TX811, CITY OF ROCKWALL AND UTILITY OWNERS TO CONFIRM LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION.
B. REFER TO CONSTRUCTION SAFETY AND PHASING PLAN SHEET FOR PHASING AND SAFETY REQUIREMENTS INCLUDING CLOSURE INFORMATION.
C. CONTRACTOR SHALL TAKE NECESSARY MEASURES TO PROTECT EXITING STRUCTURES (BUILDING, FENCE, UTILITIES, ETC.). ANY DAMAGE SHALL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR.
D. PROTECT ALL LIGHTING SYSTEM AND OTHER EQUIPMENT DURING CONSTRUCTION.
E. PROTECT ANY UNDERGROUND UTILITIES FOUND DURING CONSTRUCTION. IF FOUND UTILITIES ARE NOT SHOWN ON PLANS, NOTIFY ENGINEER AND RECORD LOCATION AND DEPTH FOR AS-BUILT DRAWINGS.
F. CONTRACTOR SHALL TAKE CARE TO OBSERVE ANY IMPACT CAUSED BY CONTRACTOR TRAFFIC AND EQUIPMENT TO THE PAVEMENT. REDUCE HAULING QUANTITIES TO REDUCE PAVEMENT LOADING, IF NECESSARY.

PAVEMENT REHABILITATION NOTES

1. PRIOR TO REHABILITATION, APPLY HERBICIDE TO ALL PAVEMENT AREAS WITH VEGETATION GROWING IN THE PAVEMENT. FOR EDGES OF PAVEMENT, APPLY HERBICIDE TO ALL VEGETATION ENCROACHING INTO PAVEMENT AND EXTEND HERBICIDE TO 12 INCHES OUTSIDE THE EDGE OF PAVEMENT. PAVEMENT SHALL BE COMPLETELY CLEARED OF VEGETATION PRIOR TO PAVEMENT REHABILITATION.
2. CRACK SEALING.
   2.1. USE CRACK SEALING MATERIAL PER P-101. FILL CRACKS GREATER THAN 1/4" IN WIDTH OR AS DIRECTED BY ENGINEER.
   2.2. TOTAL CRACK SEALING QUANTITY ALLOWANCE IS 32,000 LINEAR FEET. ANY AMOUNT GREATER THAN THAT WILL NEED APPROVAL FROM ENGINEER.
   2.3. CRACKS SHALL BE CLEANED ACCORDING TO P-101 PRIOR TO SEALING, ROUTING AND SAWING NOT REQUIRED, FILL CRACK TO 1/8" BELOW THE PAVEMENT SURFACE
3. FLEXIBLE PAVEMENT STRUCTURAL REPAIR
   3.1. CONTRACTOR MAY MAKE REPAIR USING METHOD 1 OR METHOD 2 PER DETAIL B5 PER TXDOT ITEM 351
   3.2. MUST BE DONE PRIOR TO SLURRY SEALING, SLURRY SEAL TO ALSO BE APPLIED TO REPAIRED AREAS.
   3.3. LOCATIONS AND DIMENSIONS SHOWN ARE APPROXIMATE, VERIFY WITH ENGINEER PRIOR TO SAWCUTTING
   3.4. ADDITIONAL AREAS IDENTIFIED DURING CONSTRUCTION BY THE ENGINEER THAT REQUIRE REPAIR SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR FLEXIBLE PAVEMENT STRUCTURAL REPAIR.
   3.5. ALL REPAIRS SURFACES SHALL NOT VARY BY MORE THAN 1/2" WHEN TESTED WITH A 10 FT STRAIGHT-EDGE IN ANY DIRECTION, UNLESS DIRECTED TO SHAPE SURFACE TO PROMOTE DRAINAGE.
4. SLURRY SEAL (P-631 REFINED COAL TAR EMULSION WITH ADDITIVES, SLURRY SEAL SURFACE TREATMENT)
   4.1. ALL DRAINAGE WORK, CRACK SEALING AND FLEXIBLE PAVEMENT STRUCTURAL REPAIR SHALL BE DONE PRIOR TO SURFACE TREATMENT.
   4.2. ALL EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS SHALL BE REMOVED PRIOR APPLICATION OF SLURRY SEAL PER ITEM P-620.

LEGEND

- PAVEMENT TO BE REHABILITATED (FLEXIBLE PAVEMENT STRUCTURE REPAIR WHERE INDICATED, CRACK SEALING, SLURRY SEAL, AND PAVEMENT MARKINGS)
- #' x #' — PROPOSED FLEXIBLE PAVEMENT STRUCTURE REPAIR (PER DETAIL B5 THIS SHEET)
- SDx — SDx — EXISTING UNDERGROUND STORM DRAIN
- W — EXISTING UNDERGROUND WATER LINE
- UGT — EXISTING UNDERGROUND TELEPHONE/COMM
- OHE — OHE — EXISTING OVERHEAD ELECTRICAL
- S — EXISTING UNDERGROUND SANITARY SEWER
- EXISTING BUILDING

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08/11/17

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1701 AIRPORT RD. ROCKWALL, TEXAS

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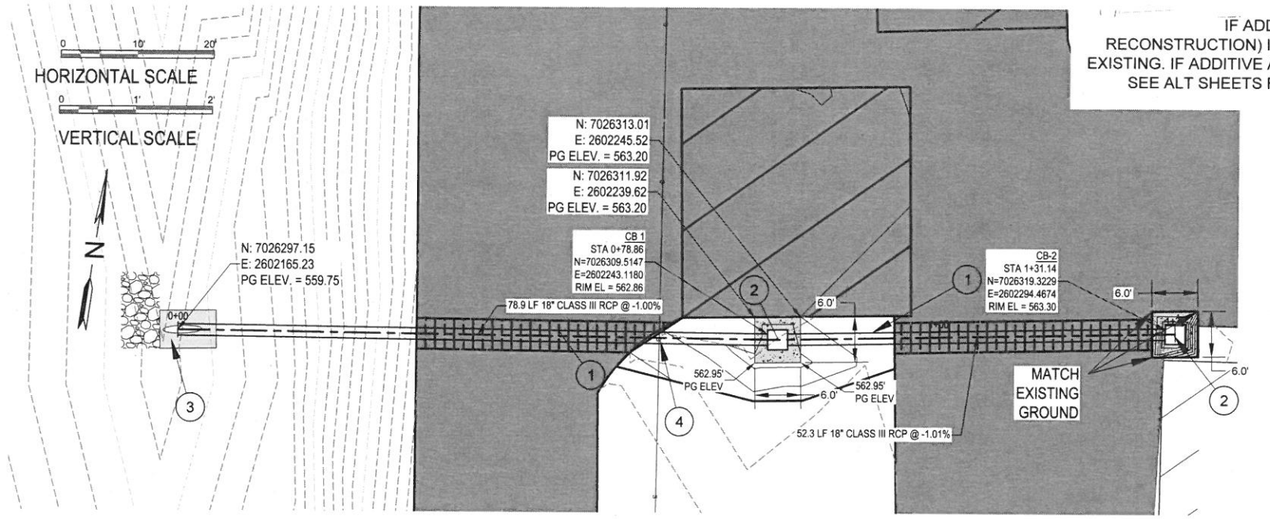
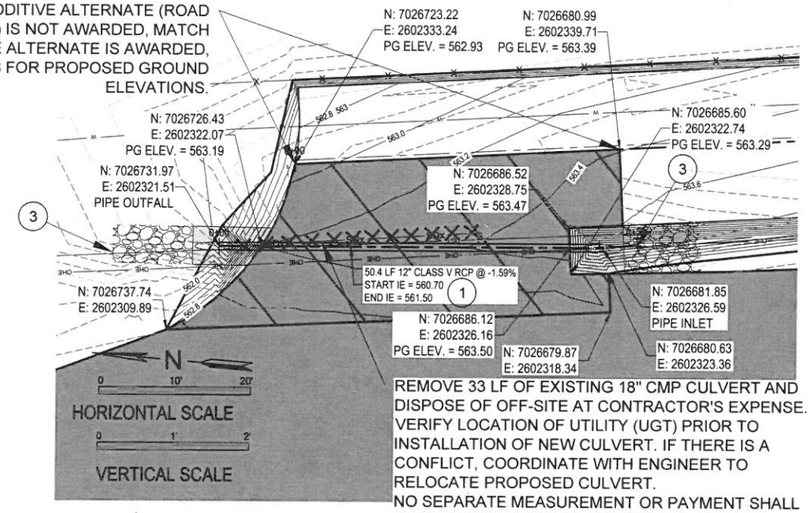
ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

AIRFIELD PAVEMENT REHABILITATION PLAN

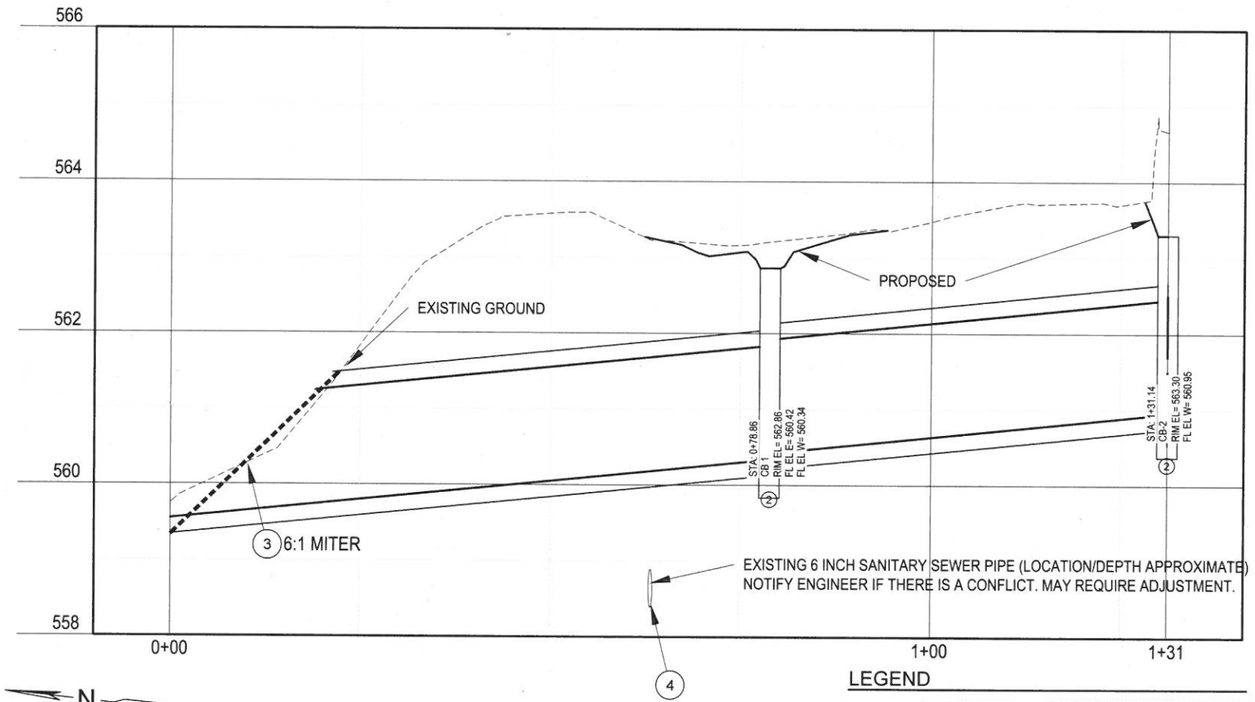
C-101

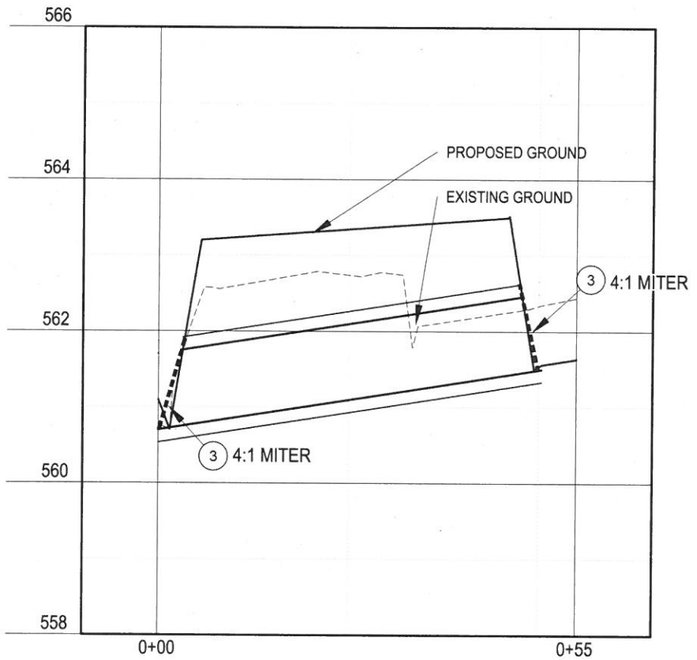


IF ADDITIVE ALTERNATE (ROAD RECONSTRUCTION) IS NOT AWARDED, MATCH EXISTING. IF ADDITIVE ALTERNATE IS AWARDED, SEE ALT SHEETS FOR PROPOSED GROUND ELEVATIONS.



REMOVE 33 LF OF EXISTING 18" CMP CULVERT AND DISPOSE OF OFF-SITE AT CONTRACTOR'S EXPENSE. VERIFY LOCATION OF UTILITY (UGT) PRIOR TO INSTALLATION OF NEW CULVERT. IF THERE IS A CONFLICT, COORDINATE WITH ENGINEER TO RELOCATE PROPOSED CULVERT. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR REMOVAL OF EXISTING CULVERT.

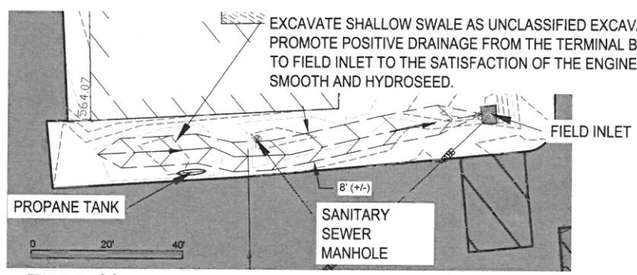




N

LEGEND

- PAVEMENT TO BE REHABILITATED (FLEXIBLE PAVEMENT STRUCTURE REPAIR WHERE INDICATED, CRACK SEALING, SLURRY SEAL, AND PAVEMENT MARKINGS)
- PROPOSED FLEXIBLE PAVEMENT STRUCTURE REPAIR
- PROPOSED TRENCH PATCHING FOR DRAINAGE IMPROVEMENTS. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE, CONSIDERED INCIDENTAL TO PIPE INSTALLATION.
- SDx — SDx — EXISTING UNDERGROUND STORM DRAIN
- SDx — SDx — REMOVE EXISTING UNDERGROUND STORM DRAIN
- W — EXISTING UNDERGROUND WATER LINE
- UGT — EXISTING UNDERGROUND TELEPHONE/COMM
- OHE — OHE — EXISTING OVERHEAD ELECTRICAL
- S — EXISTING UNDERGROUND SANITARY SEWER



GENERAL NOTES

A. CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING TX811, CITY OF ROCKWALL AND UTILITY OWNERS TO CONFIRM LOCATION OF ALL UTILITIES.
B. REFER TO SHEETS G-006 FOR PHASING AND SAFETY REQUIREMENTS.
C. CONTRACTOR SHALL TAKE NECESSARY MEASURES TO PROTECT EXITING STRUCTURES (BUILDING, FENCE, UTILITIES, ETC.). ANY DAMAGE SHALL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR.
D. CONTRACTOR EQUIPMENT TO KEEP OFF ASPHALT PAVEMENT TO REMAIN IN ORDER TO PREVENT DAMAGE.
E. AIRFIELD LIGHTING SYSTEM INCLUDING EDGE LIGHTS, LIGHTED SIGNS, AND VGSI'S ARE POWERED BY UNDERGROUND CIRCUITRY. VERIFY LOCATIONS AND DEPTHS OF PAVEMENT CROSSINGS PRIOR TO PULVERIZING OR DEMOLITION WORK. PROTECT ALL LIGHTING SYSTEM EQUIPMENT DURING CONSTRUCTION.

KEY NOTES

AS INDICATED BY: (00)

1. INSTALL DRAINAGE PIPE PER DETAIL A1/C-501
2. INSTALL CATCH BASIN PER DETAIL A4/C/501
3. INSTALL SLOPED PIPE END TREATMENT PER SHEETS C-502 AND C-503
4. EXISTING SANITARY SEWER UTILITY. THIS LINE IS FROM A PUMP STATION TO THE NORTH, WHICH PUMPS TOWARDS THE SOUTH. IF A CONFLICT EXISTS WITH NEW PIPE, EXCAVATE THE SANITARY SEWER PIPE A MINIMUM OF 20 FEET EITHER SIDE OF CONFLICT AND ADJUST AS NECESSARY TO AVOID CONFLICT. COORDINATE ADJUSTMENT WITH ENGINEER.

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08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

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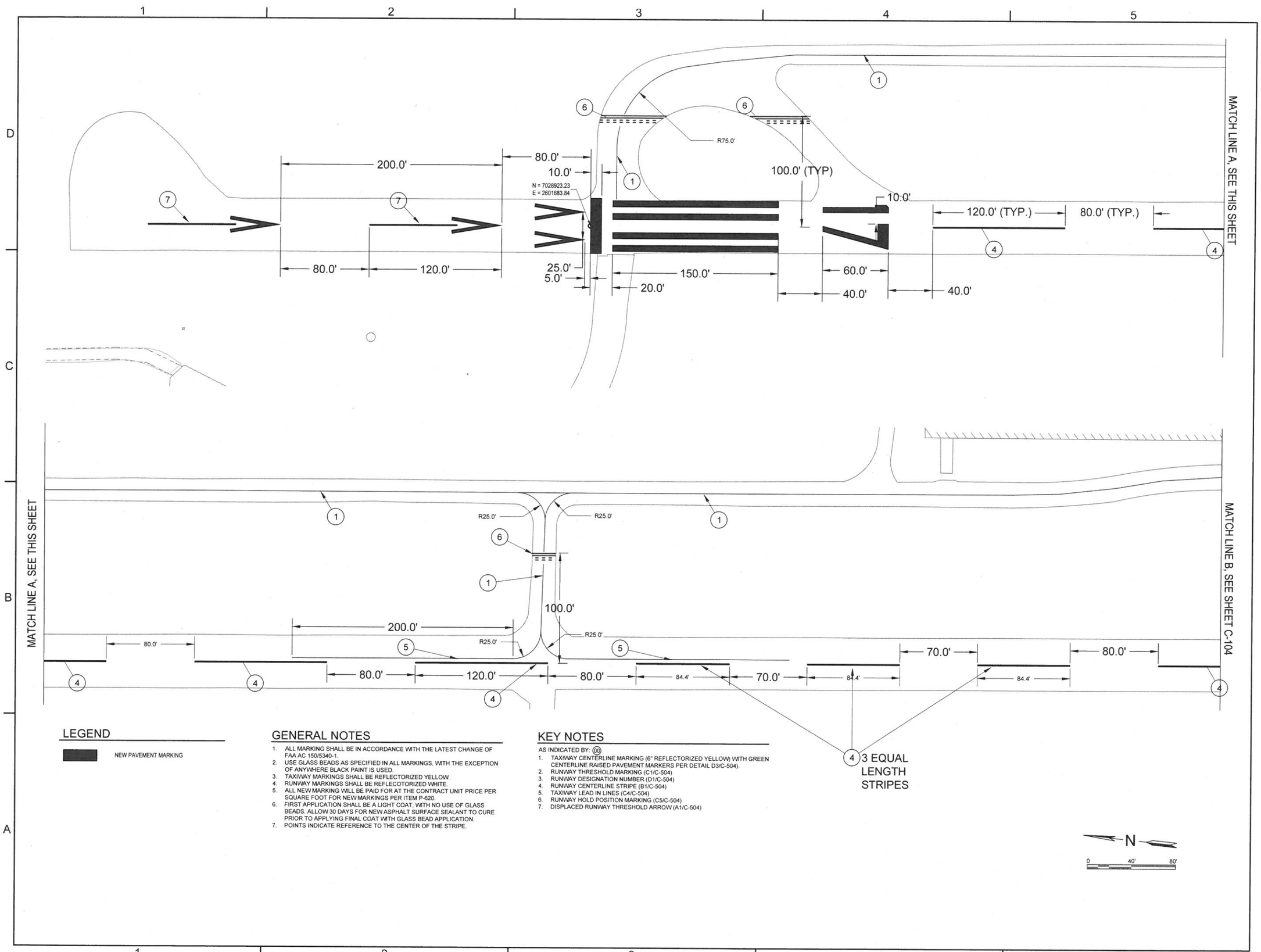
ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

DRAINAGE IMPROVEMENT PLAN

C-102



LEGEND

NEW PAVEMENT MARKING

GENERAL NOTES

1. ALL MARKING SHALL BE IN ACCORDANCE WITH THE LATEST CHANGE OF FAA AC 150/5340-1.
2. USE GLASS BEADS AS SPECIFIED IN ALL MARKINGS, WITH THE EXCEPTION OF ANYWHERE BLACK PAINT IS USED.
3. TAXIWAY MARKINGS SHALL BE REFLECTORIZED YELLOW.
4. RUNWAY MARKINGS SHALL BE REFLECTORIZED WHITE.
5. ALL NEW MARKING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR NEW MARKINGS PER ITEM P-620.
6. FIRST APPLICATION SHALL BE A LIGHT COAT, WITH NO USE OF GLASS BEADS. ALLOW 30 DAYS FOR NEW ASPHALT SURFACE SEALANT TO CURE PRIOR TO APPLYING FINAL COAT WITH GLASS BEAD APPLICATION.
7. POINTS INDICATE REFERENCE TO THE CENTER OF THE STRIPE.

KEY NOTES

AS INDICATED BY: (00)

1. TAXIWAY CENTERLINE MARKING (6" REFLECTORIZED YELLOW) WITH GREEN CENTERLINE RAISED PAVEMENT MARKERS PER DETAIL D3/C-504).
2. RUNWAY THRESHOLD MARKING (C1/C-504)
3. RUNWAY DESIGNATION NUMBER (D1/C-504)
4. RUNWAY CENTERLINE STRIPE (B1/C-504)
5. TAXIWAY LEAD IN LINES (C4/C-504)
6. RUNWAY HOLD POSITION MARKING (C5/C-504)
7. DISPLACED RUNWAY THRESHOLD ARROW (A1/C-504)

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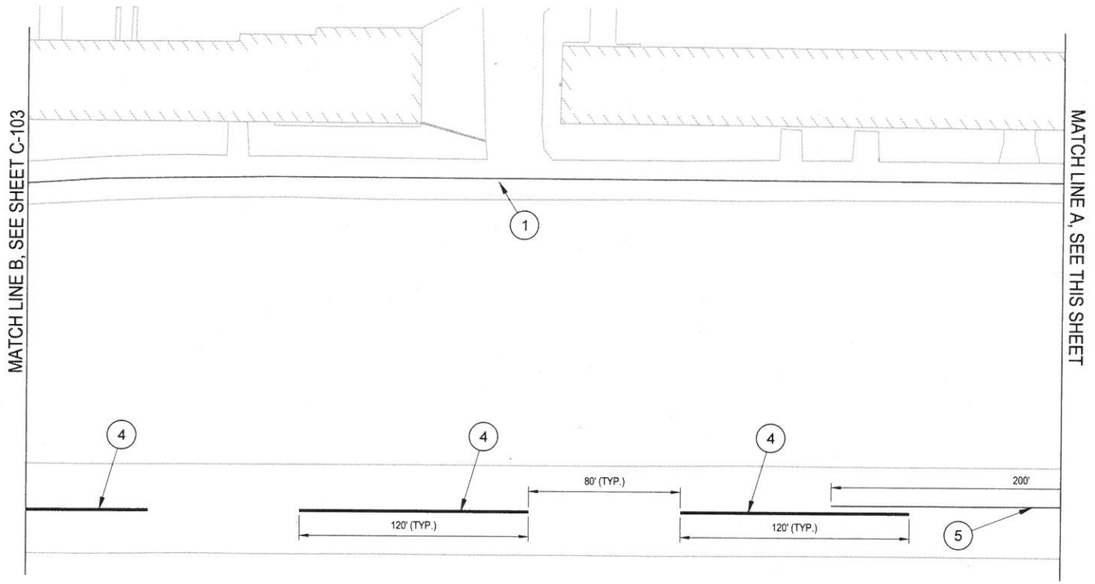
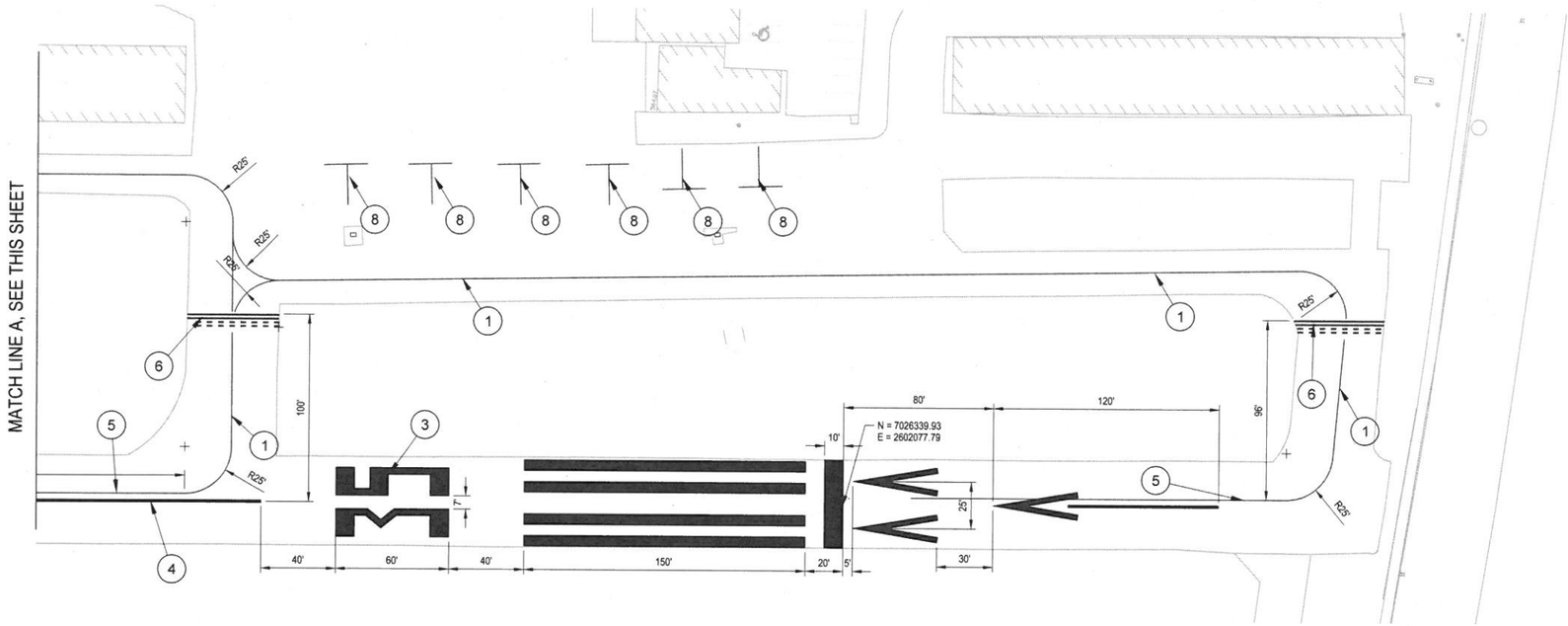
AIRFIELD PAVEMENT MARKING PLAN

C-103





LEGEND

NEW PAVEMENT MARKING

GENERAL NOTES

1. ALL MARKING SHALL BE IN ACCORDANCE WITH THE LATEST CHANGE OF FAA AC 150/5340-1.
2. USE GLASS BEADS AS SPECIFIED IN ALL MARKINGS, WITH THE EXCEPTION OF ANYWHERE BLACK PAINT IS USED.
3. TAXIWAY MARKINGS SHALL BE REFLECTORIZED YELLOW.
4. RUNWAY MARKINGS SHALL BE REFLECTORIZED WHITE.
5. ALL NEW MARKING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR NEW MARKINGS.
6. FIRST APPLICATION SHALL BE A LIGHT COAT, WITH NO USE OF GLASS BEADS. ALLOW 30 DAYS FOR NEW ASPHALT SURFACE SEALANT TO CURE PRIOR TO APPLYING FINAL COAT WITH GLASS BEAD APPLICATION.
7. POINTS INDICATE REFERENCE TO THE CENTER OF THE STRIPE.

KEY NOTES

AS INDICATED BY: (00)

1. TAXIWAY CENTERLINE MARKING (6" REFLECTORIZED YELLOW) WITH GREEN CENTERLINE RAISED PAVEMENT MARKERS PER DETAIL D3/C-504).
2. RUNWAY THRESHOLD MARKING (C1/C-504)
3. RUNWAY DESIGNATION NUMBER (D1/C-504)
4. RUNWAY CENTERLINE STRIPE (B1/C-504)
5. TAXIWAY LEAD IN LINES (C4/C-504)
6. RUNWAY HOLD POSITION MARKING (C5/C-504)
7. DISPLACED RUNWAY THRESHOLD ARROW (A1/C-504)
8. REPAINT TIE-DOWN POSITIONS IN NON-REFLECTIVE YELLOW. CONTRACTOR SHALL TAKE MEASUREMENTS TO DETERMINE ORIGINAL PAINTING AND PAINT BACK AT THE SAME LOCATION.

N

0 40' 80'

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ROCKWALL AIRPORT
PAVEMENT REHABILITATION
& DRAINAGE IMPROVEMENTS

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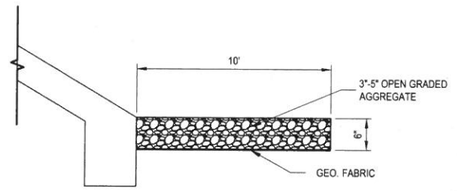
AIRFIELD PAVEMENT MARKING PLAN

C-104

NOTE

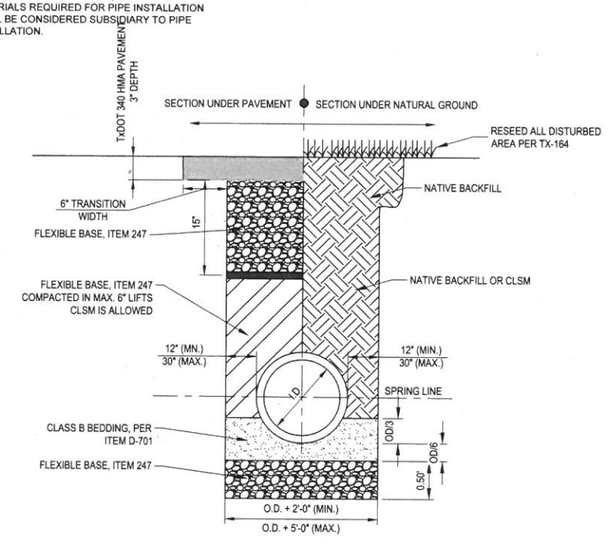
1. WIDTH SHALL MATCH THE SAFETY END TREATMENT.



C4 SAFETY END TREATMENT
NO SCALE

NOTE

1. SEE SHEET C-102 FOR DRAINAGE PLAN.
2. INSTALL PER ITEM D-701
3. ALL PAVING, BASE, BEDDING, AND OTHER MATERIALS REQUIRED FOR PIPE INSTALLATION SHALL BE CONSIDERED SUBSIDIARY TO PIPE INSTALLATION.



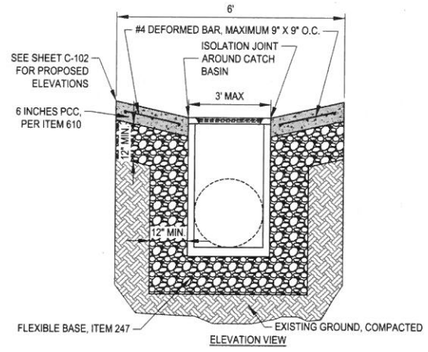
A1 STANDARD TRENCH DETAIL PRECAST REINFORCED CONCRETE PIPE
NO SCALE

FABRICATION NOTES

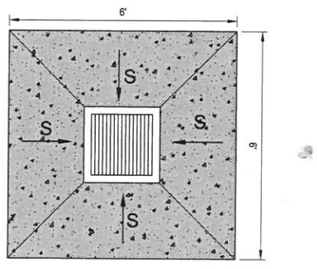
1. GRATE, FRAME, AND STRUCTURE SHALL BE RATED FOR H20 LOADING.
2. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. KNOCKOUT MUST BE LARGE ENOUGH TO ACCEPT 18" RCP.

INSTALLATION NOTES

1. INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO JUNCTION BOX.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN 1" BETWEEN EACH SECTION, OR 1/2 THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATIONS.
4. FOR RIGID PIPE, CUT HOLE IN THIN WALL PANEL (KO) 4" MAX, 2" MIN LARGER THAN PIPE OD.



ELEVATION VIEW



S= MIN. SLOPE 5%
MAX SLOPE 25%

A4 STORM SEWER PRECAST CATCH BASIN
NO SCALE

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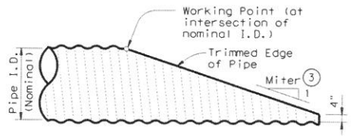
DETAILS

C-501

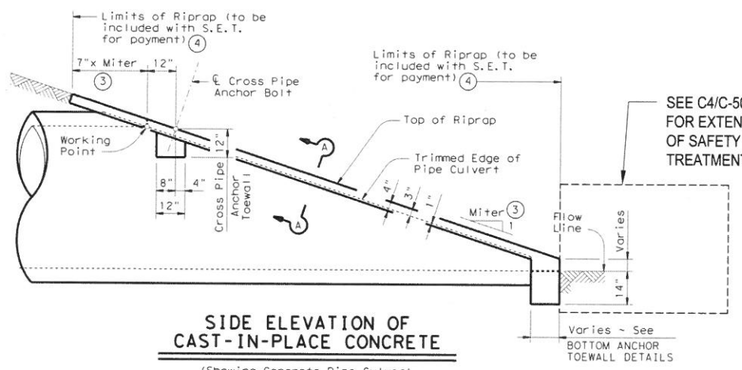
NOTE: SELECT MITER THAT IS CLOSEST TO THE SURROUNDING GRADE IN ITS PROPOSED CONDITION



NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

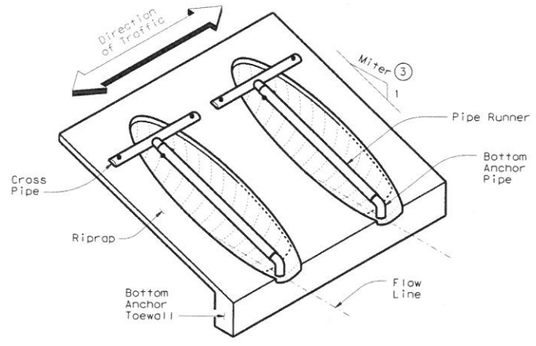
SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert. Details of Concrete Pipe Culvert are similar.)



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert. Details of Corrugated Metal Pipe Culvert are similar. Pipe Runners not shown for clarity)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS (1) (2)

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length											
			3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
			0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
24"	1'- 7"	3'- 5"	N/A	N/A	N/A	5'-10"	N/A	N/A	N/A	8'- 1"	N/A	N/A	N/A	12'- 9"
27"	1'- 8"	3'- 8"	N/A	N/A	5'- 5"	6'-11"	N/A	N/A	7'- 7"	9'- 7"	N/A	N/A	11'-11"	14'-11"
30"	1'-10"	3'-11"	N/A	N/A	6'- 4"	8'- 0"	N/A	N/A	8'- 9"	11'- 0"	N/A	N/A	13'- 8"	17'- 0"
33"	1'-11"	4'- 2"	6'- 2"	6'- 5"	7'- 3"	9'- 1"	8'- 6"	8'-10"	10'- 0"	12'- 5"	13'- 3"	13'- 9"	15'- 5"	19'- 2"
36"	2'- 1"	4'- 5"	6'-11"	7'- 3"	8'- 2"	10'- 2"	9'- 6"	9'-11"	11'- 2"	13'-10"	14'- 9"	15'- 3"	17'- 2"	21'- 3"
42"	2'- 4"	4'-11"	8'- 6"	8'-10"	9'-11"	12'- 4"	11'- 7"	12'- 0"	13'- 6"	16'- 8"	17'- 9"	18'- 5"	20'- 8"	25'- 7"
48"	2'- 7"	5'- 5"	10'- 1"	10'- 5"	11'- 9"	N/A	13'- 7"	14'- 2"	15'-10"	N/A	20'- 9"	21'- 6"	24'- 2"	N/A
54"	3'- 0"	5'-11"	11'- 8"	12'- 1"	N/A	N/A	15'- 8"	16'- 3"	N/A	N/A	23'-10"	24'- 8"	N/A	N/A
60"	3'- 3"	6'- 5"	13'- 3"	N/A	N/A	N/A	17'- 9"	N/A	N/A	N/A	26'-10"	N/A	N/A	N/A

TYPICAL PIPE CULVERT MITERS (3)

Side Slope	0° Skew	15° Skew	30° Skew	45° Skew
3:1	3:1	3.106:1	3.464:1	4.243:1
4:1	4:1	4.141:1	4.619:1	5.657:1
6:1	6:1	6.212:1	6.928:1	8.485:1

CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED (2)

Nominal Culvert I.D.	Single Pipe Culvert	Multiple Pipe Culverts
12" thru 21"	Skews thru 45°	Skews thru 45°
24"	Skews thru 45°	Skews thru 30°
27"	Skews thru 30°	Skews thru 15°
30"	Skews thru 15°	Skews thru 15°
33"	Skews thru 15°	Always required
36"	Normal (No Skew)	Always required
42" to 60"	Always required	Always required

STANDARD PIPE SIZES & MAX PIPE RUNNER LENGTHS (1)

Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10'- 0"
4" STD	4.500"	4.026"	19'- 8"
5" STD	5.563"	5.047"	34'- 2"

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) (5)

Nominal Culvert I.D.	3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
12"	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
15"	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
18"	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0
21"	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.2
24"	0.6	0.7	0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.3
27"	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.1	1.2	1.4
30"	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.2	1.2	1.3	1.6
33"	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.3	1.3	1.4	1.5	1.7
36"	0.9	0.9	0.9	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.8
42"	1.0	1.0	1.1	1.3	1.2	1.3	1.3	1.6	1.6	1.7	1.8	2.1
48"	1.1	1.1	1.2	N/A	1.4	1.4	1.5	N/A	1.9	1.9	2.1	N/A
54"	1.3	1.3	N/A	N/A	1.6	1.6	N/A	N/A	2.1	2.1	N/A	N/A
60"	1.4	N/A	N/A	N/A	1.7	N/A	N/A	N/A	2.3	N/A	N/A	N/A

(1) Size of Pipe Runner shall be as shown in the tables. Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stub Out and Bottom Anchor Pipe shall be the next smaller size pipe as shown in the STANDARD PIPE SIZES table.

(2) This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For 60" culvert pipes, the skew must not exceed 0°.
For 54" culvert pipes, the skew must not exceed 15°.
For 48" culvert pipes, the skew must not exceed 30°.
For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT "Roadway Design Manual".

(3) Miter = Slope of Mitered Pipe Culvert End

(4) Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

(5) Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple Pipe Culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

SHEET 1 OF 2

Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA
PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO.

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DATE:
FILE:

FILE NAME: \\data1\projects\2016\4089.16\02_DSGN\02_DWG\050_CIVIL\C-501-4089.dwg LAYOUT NAME: C-502 PRINTED: Monday, August 21, 2017 - 3:18pm USER: DMayo

PSC
PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
DEREK W. MAYO
121115
LICENSED
PROFESSIONAL ENGINEER
08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

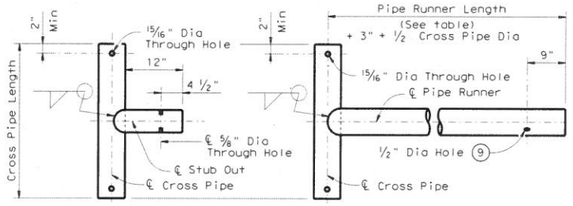
KEY PLAN

NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

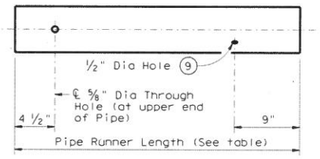
TxDOT SAFETY END TREATMENT (1 OF 2)

C-502



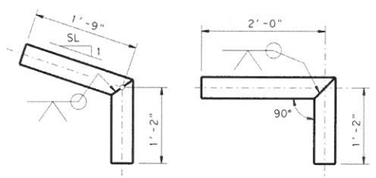
OPTION A1 OPTION A2

CROSS PIPE AND CONNECTIONS DETAILS



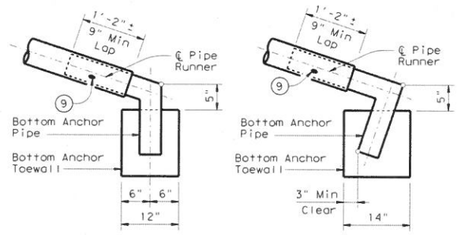
NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS



OPTION B1 OPTION B2

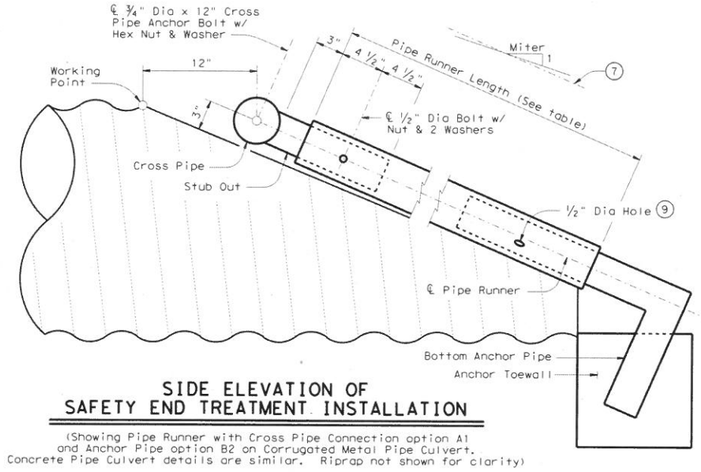
BOTTOM ANCHOR PIPE DETAILS (10)



OPTION B1 OPTION B2

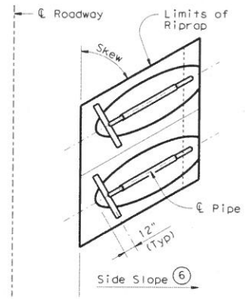
BOTTOM ANCHOR TOEWALL DETAILS

(Culvert & Riprap not shown for clarity)

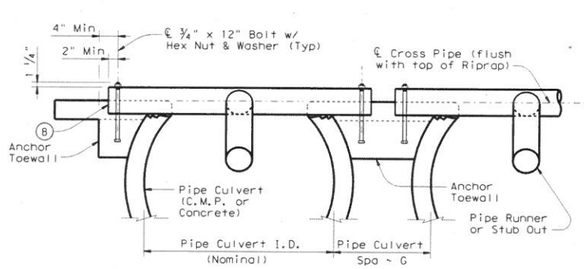


SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

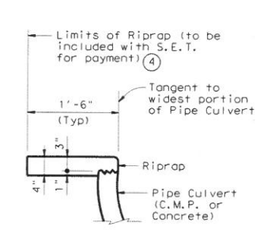
(Showing Pipe Runner with Cross Pipe Connection option A1 and Anchor Pipe option B2 on Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Riprap not shown for clarity)



PLAN OF SKEWED INSTALLATION



SHOWING CROSS PIPE & ANCHOR TOEWALL



SHOWING TYPICAL PIPE CULVERT & RIPRAP

SECTION A-A

(4) Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

(6) Recommended values of side slope are 3:1, 4:1, & 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.

(7) Note that actual slope of Pipe Runner may vary slightly from Side Slope of Riprap and trimmed Culvert Pipe edge.

(8) Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(9) After installation, the 1/2" hole shall be inspected to ensure that the lap of the Pipe Runner with the Bottom Anchor Pipe is adequate.

(10) At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the Runner) may be substituted for the mitered and welded joint in the Bottom Anchor Pipe.

GENERAL NOTES:

Pipe Runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Pipe Runners, Cross Pipes, and Anchor Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

SHEET 2 OF 2

Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.
11-10: Add note for synthetic fibers.				

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DATE:
FILE:

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PSC PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. F-560 STATE OF TEXAS DEREK W. MAYO 121115 LICENSED PROFESSIONAL ENGINEER 08/11/17

City of Rockwall The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD. ROCKWALL, TEXAS

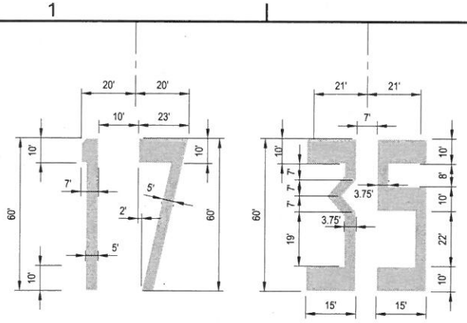
KEY PLAN

NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

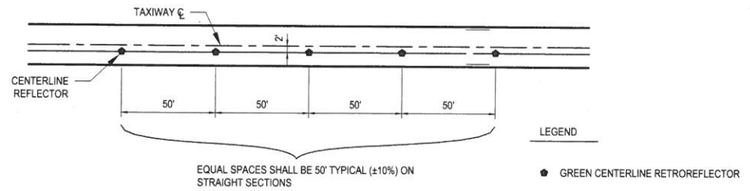
TxDOT SAFETY END TREATEMENT (2 OF 2)

C-503

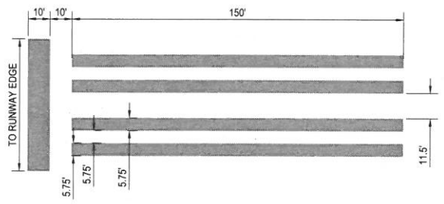


D1 RUNWAY DESIGNATION NUMERALS DETAIL
NO SCALE

NOTES:
1. ALL TAXIWAY CENTERLINE RETROREFLECTIVE MARKERS SHALL BE GREEN. CENTERLINE MARKER SPACING SHALL BE 50' (±10%) AND 25' (±10%) ON CURVE SECTIONS WITH 200' RADIUS OR LESS.

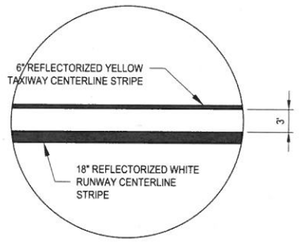


D3 TYPICAL RAISED PAVEMENT MARKER SPACING
NO SCALE

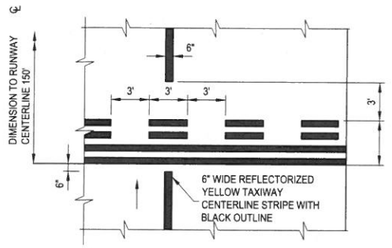


C1 RUNWAY THRESHOLD
NO SCALE

NOTE
A. SEPARATION DIMENSION IS FROM INSIDE EDGES OF STRIPES

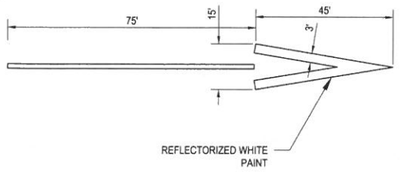


C4 TAXIWAY LEAD IN LINE
NO SCALE

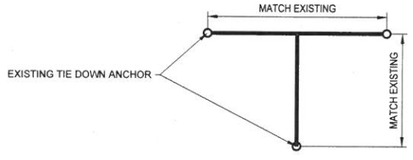


C5 RUNWAY HOLDING POSITION MARKING
NO SCALE

B1 RUNWAY CENTERLINE MARKING
NO SCALE



A1 DISPLACED RUNWAY THRESHOLD ARROW
NO SCALE



NOTES:
1. 6" WIDTH YELLOW STRIPES

A3 TIE-DOWN MARKINGS
NO SCALE

PSC
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PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
DEREK W. MAYO
121115
LICENSED PROFESSIONAL ENGINEER
08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT
PAVEMENT REHABILITATION
& DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

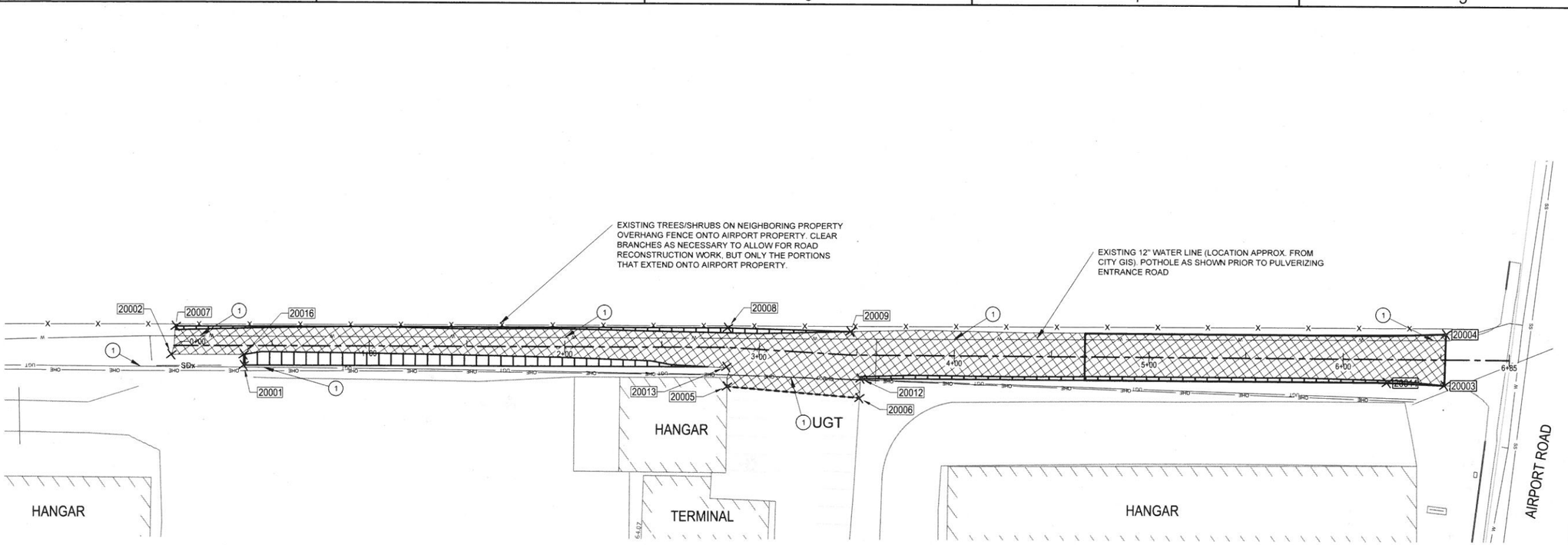
KEY PLAN

NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

PAVEMENT MARKING DETAILS

C-504



DEMO POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
20001	7026686.52	2602328.75	SAWCUT
20002	7026723.86	2602328.55	SAWCUT
20003	7026076.17	2602413.93	SAWCUT
20004	7026079.49	2602440.04	SAWCUT
20005	7026439.94	2602356.33	SAWCUT
20006	7026372.02	2602361.05	SAWCUT
20007	7026723.91	2602343.25	PROPOSED
20008	7026444.17	2602386.10	PROPOSED
20009	7026381.93	2602393.95	PROPOSED
20011	7026105.54	2602410.78	PROPOSED
20012	7026372.98	2602371.02	PROPOSED
20013	7026441.80	2602366.23	PROPOSED
20016	7026687.34	2602334.14	PROPOSED

DEMOLITION NOTES

A. CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING TX811, CITY OF ROCKWALL AND UTILITY OWNERS TO CONFIRM LOCATION OF ALL UTILITIES.
B. FOR ROAD WORK, CONTRACTOR SHALL NOT ENTER ANY ACTIVE AIRFIELD PAVEMENT. NO HAULING, PARKING, OR CONSTRUCTION TRAFFIC WILL BE ALLOWED ON AIRFIELD PAVEMENT UNLESS SPECIFICALLY GIVEN PERMISSION BY THE ENGINEER.
C. CONTRACTOR SHALL TAKE NECESSARY MEASURES TO PROTECT EXITING STRUCTURES (BUILDING, FENCE, UTILITIES, ETC.). ANY DAMAGE SHALL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR.
D. CONTRACTOR EQUIPMENT TO KEEP OFF ASPHALT PAVEMENT TO REMAIN IN ORDER TO PREVENT DAMAGE.
E. AIRFIELD LIGHTING SYSTEM INCLUDING EDGE LIGHTS, LIGHTED SIGNS, AND VGSI'S ARE POWERED BY UNDERGROUND CIRCUITRY. VERIFY LOCATIONS AND DEPTHS OF PAVEMENT CROSSINGS PRIOR TO PULVERIZING OR DEMOLITION WORK. PROTECT ALL LIGHTING SYSTEM EQUIPMENT DURING CONSTRUCTION.

KEY NOTES

AS INDICATED BY: (00)

1. POTHOLE UNDERGROUND UTILITY AT THIS LOCATION TO DETERMINE ACCURATE LOCATION OF THE UTILITY. ANY DAMAGE TO EXISTING UTILITY SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. DETERMINE IF PROPOSED CONSTRUCTION CONFLICTS WITH THE UTILITY AND NOTIFY ENGINEER IMMEDIATELY. PROVIDE ENGINEER WITH LOCATIONS AND ELEVATIONS OF THE UTILITIES LOCATED. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR POTHOLING.

LEGEND

- ENTRANCE ROAD PAVEMENT TO BE PULVERIZED AND REUSED PER DETAIL (C1/ALT-501)
- AREA TO BE EXCAVATED FOR WIDENING OF ENTRANCE ROAD
- EXISTING BUILDING
- SAWCUT
- SDx — SDx — EXISTING UNDERGROUND STORM DRAIN
- W — EXISTING UNDERGROUND WATER LINE
- EXISTING UNDERGROUND TELEPHONE/COMM
- OHE — OHE — EXISTING OVERHEAD ELECTRICAL
- S — EXISTING UNDERGROUND SANITARY SEWER
- X — X — EXISTING FENCE

N

0 40' 80'

PSC

PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
DEREK W. MAYO
121115
LICENSED
PROFESSIONAL ENGINEER
08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

KEY PLAN

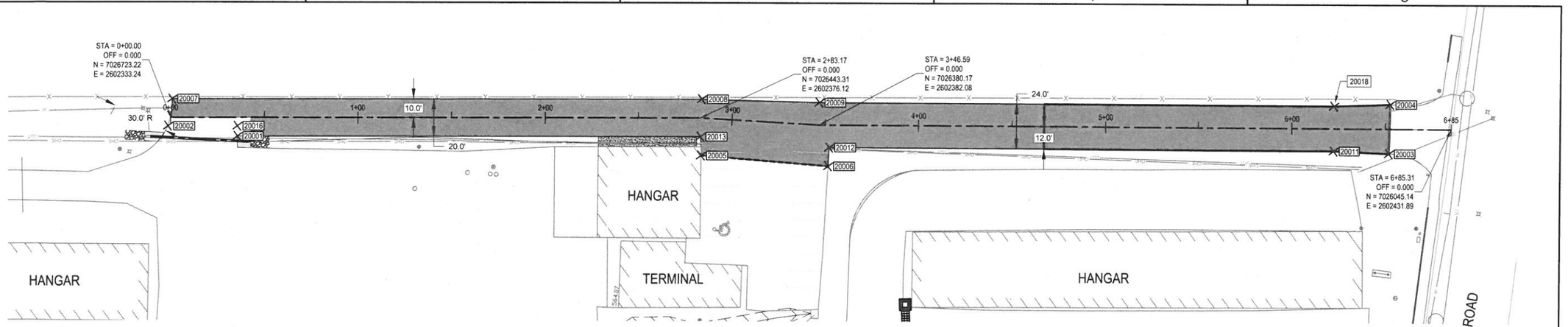
NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

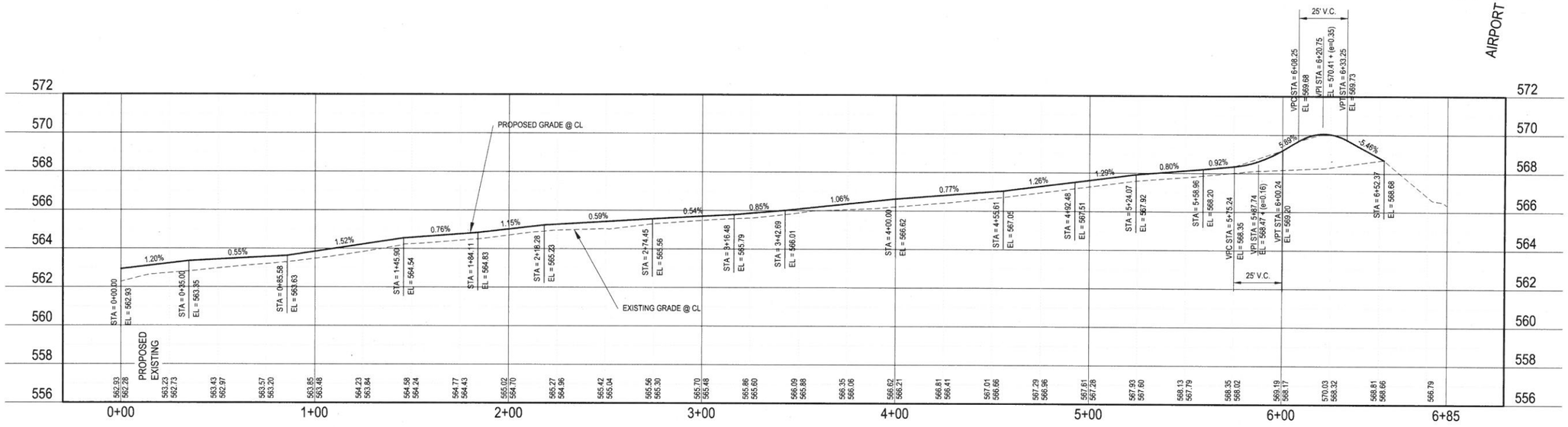
ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

AIRPORT ENTRANCE ROAD DEMOLITION PLAN

ALT-101

FILE NAME: \\data1\projects\2016\4089.16\02_DSGN\02_DWG\050_CIVIL\ALT-101-4089.dwg LAYOUT NAME: ALT-101 PRINTED: Monday, August 21, 2017 - 3:19pm USER: DMayo





LEGEND

- NEW ENTRANCE ROAD PAVEMENT
- NEW CONCRETE DRAINAGE VALLEY GUTTER
- EXISTING BUILDING
- SDx — EXISTING UNDERGROUND STORM DRAIN
- X — EXISTING FENCE
- SDx — SDx — EXISTING UNDERGROUND STORM DRAIN
- W — EXISTING UNDERGROUND WATER LINE
- UGT — EXISTING UNDERGROUND TELEPHONE/COMM
- OHE — OHE — EXISTING OVERHEAD ELECTRICAL
- S — EXISTING UNDERGROUND SANITARY SEWER

LAYOUT CONTROL POINTS			
POINT #	NORTHING	EASTING	PROPOSED ELEVATION
20001	7026686.5174	2602328.7465	563.47
20002	7026723.8586	2602328.5450	563.06
20003	7026076.1674	2602413.9348	567.92
20004	7026079.4943	2602440.0377	0.00
20005	7026439.9385	2602356.3277	564.50
20006	7026372.0167	2602361.0538	564.71
20007	7026723.9053	2602343.2530	562.61
20008	7026444.1736	2602386.1000	565.31
20009	7026381.9343	2602393.9531	565.69
20011	7026105.5433	2602410.7792	568.24
20012	7026372.9777	2602371.0209	565.35
20013	7026441.8004	2602366.2302	565.00
20016	7026687.3433	2602334.1381	563.41
20018	7026109.0725	2602434.5183	0.00

N

HORIZONTAL SCALE 0 30' 60'

VERTICAL SCALE 0 3' 6'

PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. C-560 STATE OF TEXAS DEREK W. MAYO 121115 LICENSED PROFESSIONAL ENGINEER 08/11/17

City of Rockwall The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD. ROCKWALL, TEXAS

KEY PLAN

NO	DATE	DESCRIPTION
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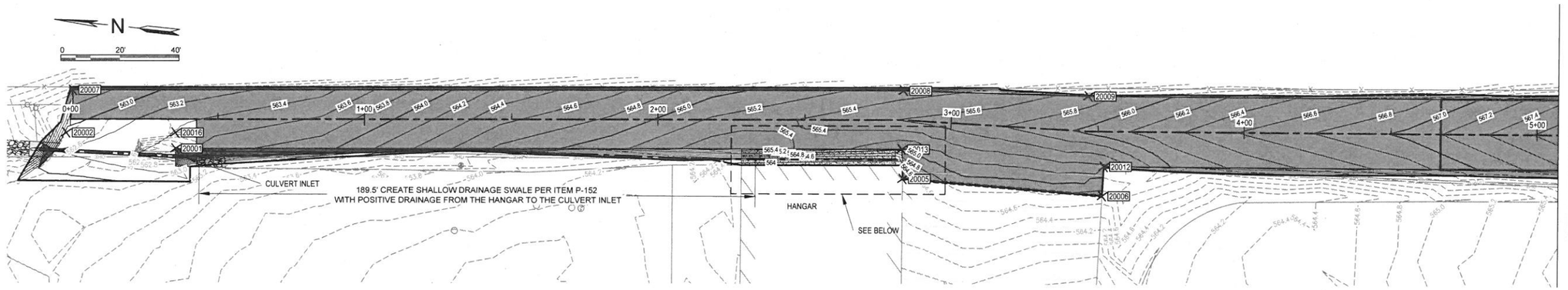
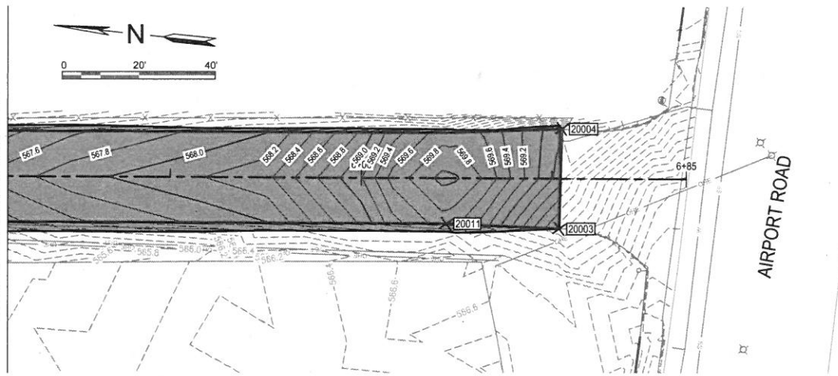
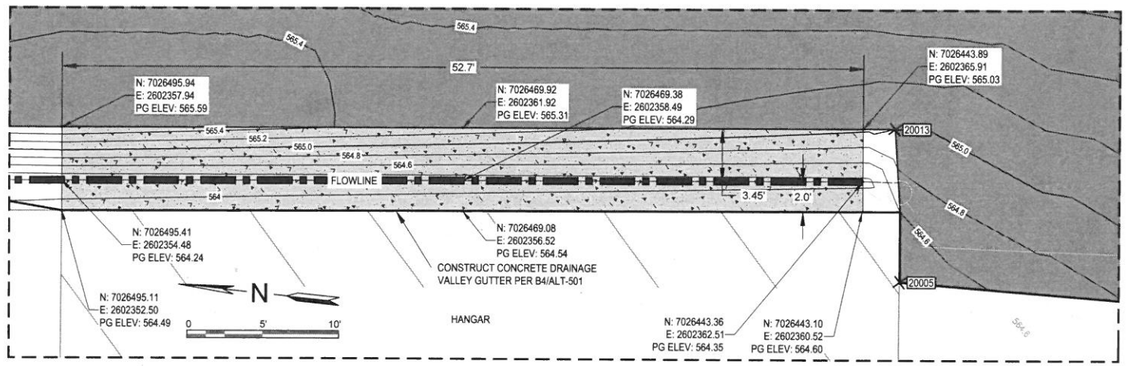
ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

AIRPORT ENTRANCE ROAD PLAN AND PROFILE

ALT-102

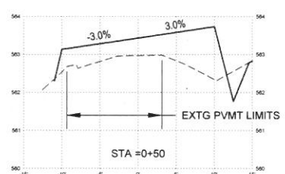


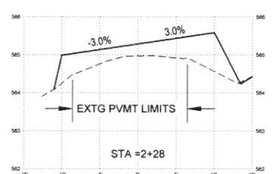


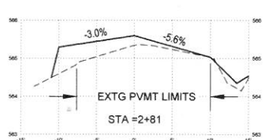


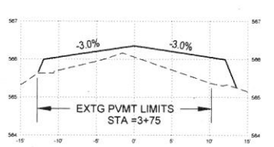
GRADING NOTE:

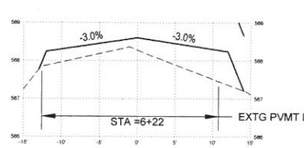
1. WHERE POSSIBLE, DAYLIGHT GRADING FROM EDGE OF PAVEMENT TO EXISTING GROUND AT A MAXIMUM 4:1 SLOPE.











0 10' 20'
HORIZONTAL SCALE

0 2' 4'
VERTICAL SCALE

LAYOUT CONTROL POINTS			
POINT #	NORTHING	EASTING	PROPOSED ELEVATION
20001	7026686.5174	2602328.7465	563.47
20002	7026723.8586	2602328.5450	563.06
20003	7026076.1674	2602413.9348	567.92
20004	7026079.4943	2602440.0377	0.00
20005	7026439.9385	2602356.3277	564.50
20006	7026372.0167	2602361.0538	564.71
20007	7026723.9053	2602343.2530	562.61
20008	7026444.1736	2602386.1000	565.31
20009	7026381.9343	2602393.9531	565.69
20011	7026105.5433	2602410.7792	568.24
20012	7026372.9777	2602371.0209	565.35
20013	7026441.8004	2602366.2302	565.00
20016	7026687.3433	2602334.1381	563.41

PSC
PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
DEREK W. MAYO
121115
LICENSED
PROFESSIONAL ENGINEER
08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT
PAVEMENT REHABILITATION
& DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

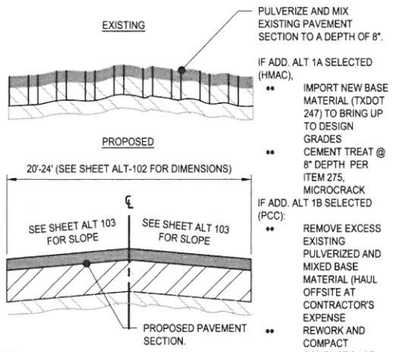
KEY PLAN

NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

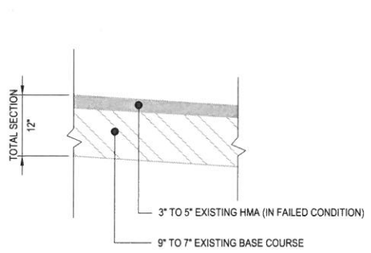
ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

AIRPORT ENTRANCE ROAD GRADING PLAN

ALT-103

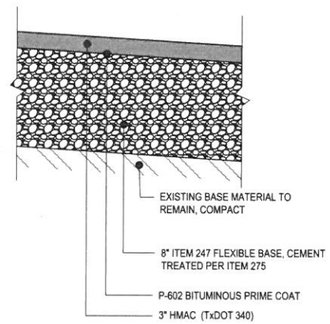


C1 ENTRANCE ROAD TYPICAL SECTION
NO SCALE

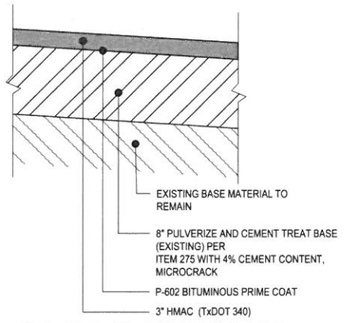


NOTE: EXISTING PAVEMENT SECTIONS ARE FROM 2 GEOTECHNICAL BORINGS. BOTH SECTIONS WERE 12 INCHES TOTAL, WITH SURFACE AND BASE COURSES AS SHOWN ABOVE.

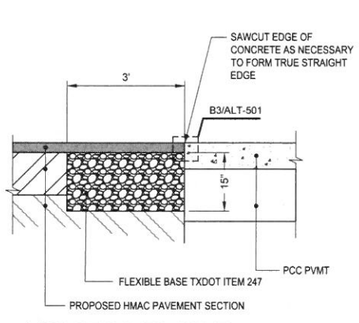
C2 EXISTING PAVEMENT SECTION
NO SCALE



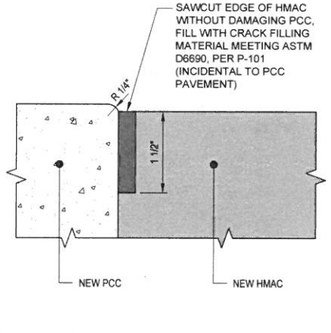
ADD. ALT. 1A ENTRANCE RD
C3 PVMT SECITON FOR HMAC ROAD WIDENING
NO SCALE



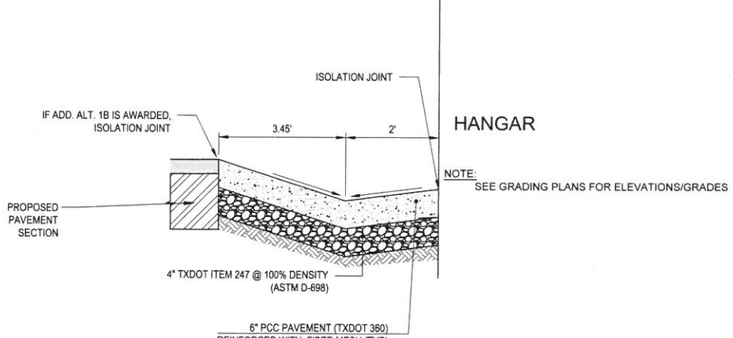
ADD. ALT. 1A ENTRANCE RD
B1 PVMT RECON HMAC SECTION
NO SCALE



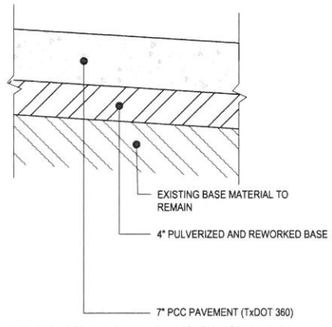
HMAC TO PCC JOINT
B2 DETAIL
NO SCALE



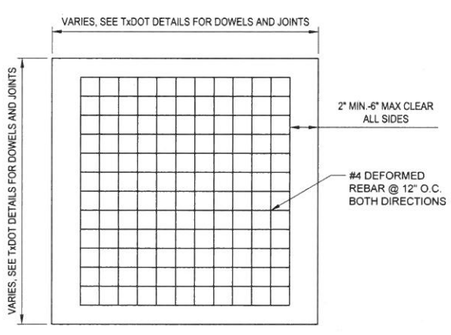
B3 PCC/HMAC JOINT DETAIL
NO SCALE



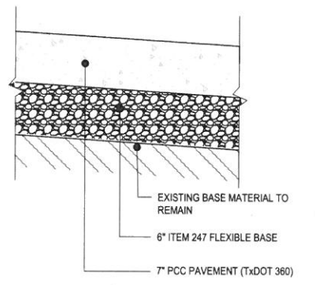
B4 CONCRETE VALLEY GUTTER
NO SCALE



ADD. ALT. 1B ENTRANCE RD
A1 PVMT RECON PCC SECTION
NO SCALE



A2 ADD ALT 1B PCC PANEL REINFORCEMENT
NO SCALE FOR ODD SHAPED PANELS AS INDICATED ON PLANS



ADD. ALT. 1B ENTRANCE RD
A4 PVMT SECTION FOR PCC ROAD WIDENING
NO SCALE

PSC
PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. STATE OF TEXAS 10,560
DEREK W. MAYO
121115
LICENSED PROFESSIONAL ENGINEER
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City of Rockwall
The New Horizon

ROCKWALL AIRPORT
PAVEMENT REHABILITATION
& DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

KEY PLAN

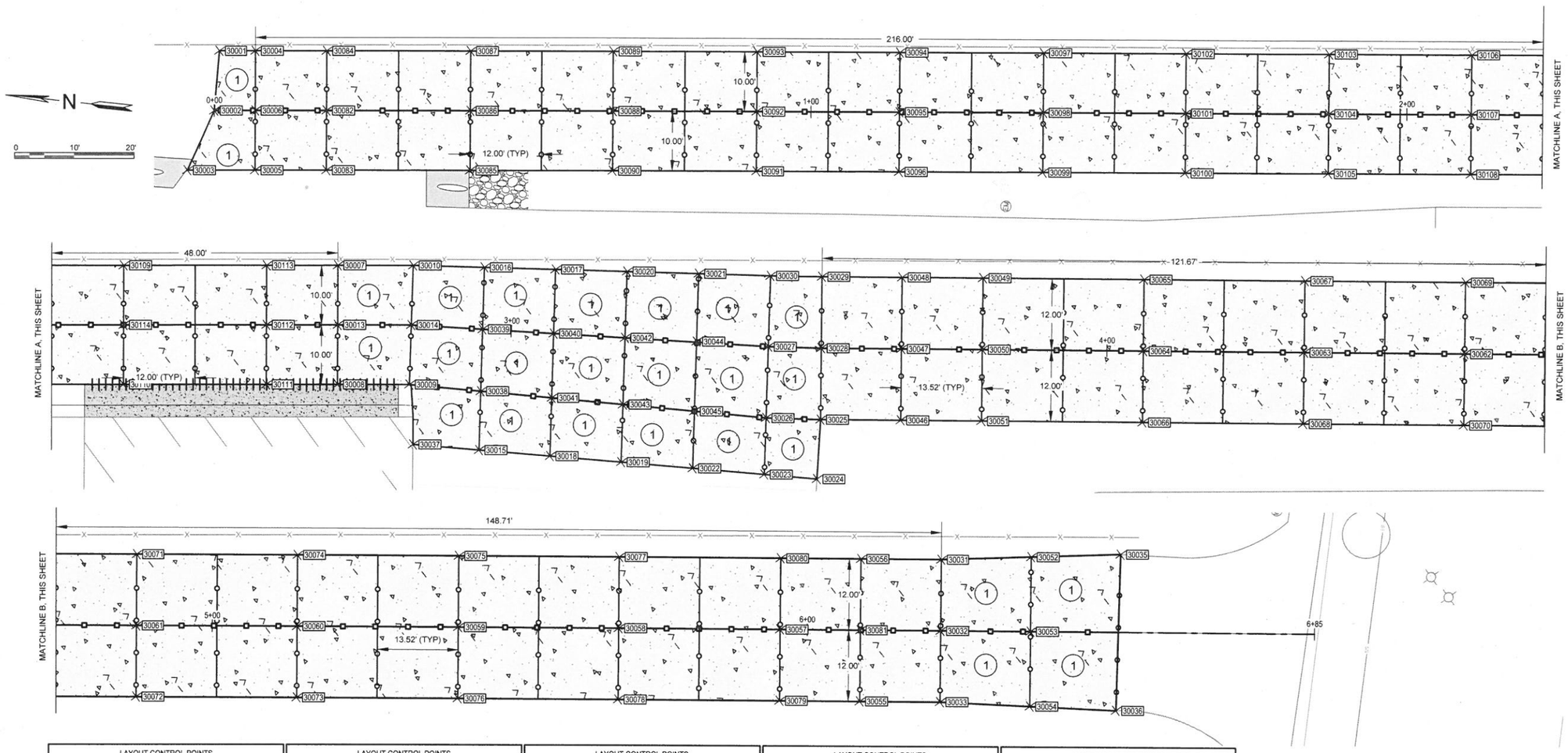
NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

AIRPORT ENTRANCE ROAD DETAILS

ALT-501

FILE NAME: \\data1\projects\2016\4089 16\02_DSGN\02_DWG\050_CIVIL\ALT-501-4089.dwg LAYOUT NAME: ALT-501 PRINTED: Monday, August 21, 2017 - 3:22pm USER: DMayo



LAYOUT CONTROL POINTS				
POINT #	NORTHING	EASTING	DESC.	PROPOSED ELEV.
30001	7026723.9053	2602343.2530	PCC	562.61
30002	7026723.2130	2602333.2424	PCC	562.93
30003	7026726.1313	2602322.6788	PCC	563.19
30004	7026717.9245	2602344.1691	PCC	562.71
30005	7026714.8963	2602324.3996	PCC	563.26
30006	7026716.4104	2602334.2843	PCC	563.01
30007	7026456.9680	2602384.1403	PCC	565.24
30008	7026453.9398	2602364.3708	PCC	565.14
30009	7026442.0782	2602366.1877	PCC	565.01
30010	7026444.5352	2602386.0446	PCC	565.31
30013	7026455.4539	2602374.2555	PCC	565.54
30014	7026443.3067	2602376.1162	PCC	565.61
30015	7026428.8364	2602357.1002	PCC	564.71
30016	7026432.6785	2602387.5504	PCC	565.36
30017	7026420.7729	2602389.0526	PCC	565.41
30018	7026416.8465	2602357.9345	PCC	564.88
30019	7026404.8566	2602358.7687	PCC	564.85
30020	7026408.8673	2602390.5548	PCC	565.47
30021	7026396.9617	2602392.0570	PCC	565.57
30022	7026392.8668	2602359.6030	PCC	564.84
30023	7026380.8769	2602360.4373	PCC	564.78
30024	7026372.0167	2602361.0538	PCC	564.71
30025	7026372.9777	2602371.0209	PCC	565.35
30026	7026382.0676	2602369.8739	PCC	565.33

LAYOUT CONTROL POINTS				
POINT #	NORTHING	EASTING	DESC.	PROPOSED ELEV.
30027	7026383.5676	2602381.7624	PCC	566.02
30028	7026374.7423	2602382.8904	PCC	566.11
30029	7026376.5069	2602394.7600	PCC	565.75
30030	7026385.0561	2602393.5592	PCC	565.66
30031	7026109.0725	2602434.5183	PCC	569.70
30032	7026107.3079	2602422.6487	PCC	570.06
30033	7026105.5433	2602410.7792	PCC	569.70
30035	7026079.4943	2602440.0377	PCC	0.00
30036	7026076.1674	2602413.9348	PCC	567.95
30037	7026439.9385	2602356.3277	PCC	564.50
30038	7026430.0751	2602366.9174	PCC	565.16
30039	7026431.3780	2602377.2436	PCC	565.67
30040	7026419.4254	2602378.3733	PCC	565.74
30041	7026418.0732	2602367.6566	PCC	565.30
30042	7026407.4728	2602379.5030	PCC	565.81
30043	7026406.0713	2602368.3957	PCC	565.31
30044	7026395.5354	2602380.7534	PCC	565.91
30045	7026394.0694	2602369.1348	PCC	565.33
30046	7026359.6060	2602373.0088	PCC	565.73
30047	7026361.3706	2602384.8783	PCC	566.25
30048	7026363.1352	2602396.7479	PCC	565.89
30049	7026349.7635	2602398.7358	PCC	566.04
30050	7026347.9989	2602386.8662	PCC	566.40
30051	7026346.2343	2602374.9967	PCC	566.04

LAYOUT CONTROL POINTS				
POINT #	NORTHING	EASTING	DESC.	PROPOSED ELEV.
30052	7026094.2834	2602437.2780	PCC	569.38
30053	7026092.4372	2602424.8595	PCC	569.50
30054	7026090.5829	2602412.3863	PCC	568.94
30055	7026118.9150	2602408.7913	PCC	569.34
30056	7026122.4442	2602432.5304	PCC	569.34
30057	7026134.0514	2602418.6729	PCC	569.04
30058	7026160.7948	2602414.6971	PCC	568.29
30059	7026187.5382	2602410.7212	PCC	568.06
30060	7026214.2817	2602406.7454	PCC	567.80
30061	7026241.0251	2602402.7696	PCC	567.45
30062	7026267.7686	2602398.7937	PCC	567.11
30063	7026294.5120	2602394.8179	PCC	566.88
30064	7026321.2554	2602390.8421	PCC	566.67
30065	7026323.0200	2602402.7116	PCC	566.31
30066	7026319.4909	2602378.9725	PCC	566.31
30067	7026296.2766	2602406.6875	PCC	566.52
30068	7026292.7474	2602382.9484	PCC	566.52
30069	7026269.5332	2602410.6633	PCC	566.75
30070	7026266.0040	2602386.9242	PCC	566.75
30071	7026242.7897	2602414.6391	PCC	567.09
30072	7026239.2605	2602390.9000	PCC	567.09
30073	7026212.5171	2602394.8759	PCC	567.44
30074	7026216.0463	2602418.6150	PCC	567.44
30075	7026189.3028	2602422.5908	PCC	567.70

LAYOUT CONTROL POINTS				
POINT #	NORTHING	EASTING	DESC.	PROPOSED ELEV.
30076	7026185.7736	2602398.8517	PCC	567.70
30077	7026162.5594	2602426.5666	PCC	567.93
30078	7026159.0302	2602402.8275	PCC	567.93
30079	7026132.2868	2602406.8034	PCC	568.68
30080	7026135.8160	2602430.5425	PCC	568.68
30081	7026120.6796	2602420.6608	PCC	569.70
30082	7026704.5487	2602336.1012	PCC	563.16
30083	7026703.0347	2602326.2165	PCC	563.34
30084	7026706.0628	2602345.9859	PCC	562.86
30085	7026679.3114	2602329.8502	PCC	563.60
30086	7026680.8254	2602339.7350	PCC	563.39
30087	7026682.3395	2602349.6197	PCC	563.09
30088	7026657.1021	2602343.3687	PCC	563.53
30089	7026658.6162	2602353.2534	PCC	563.23
30090	7026655.5880	2602333.4840	PCC	563.83
30091	7026631.8647	2602337.1177	PCC	564.01
30092	7026633.3788	2602347.0025	PCC	563.71
30093	7026634.8928	2602356.8872	PCC	563.41
30094	7026611.1695	2602360.5209	PCC	563.77
30095	7026609.6555	2602350.6362	PCC	564.07
30096	7026608.1414	2602340.7515	PCC	564.37
30097	7026587.4462	2602364.1547	PCC	564.14
30098	7026585.9321	2602354.2699	PCC	564.44
30099	7026584.4181	2602344.3852	PCC	564.74

LAYOUT CONTROL POINTS				
POINT #	NORTHING	EASTING	DESC.	PROPOSED ELEV.
30100	7026560.6948	2602348.0190	PCC	564.97
30101	7026562.2088	2602357.9037	PCC	564.67
30102	7026563.7229	2602367.7884	PCC	564.37
30103	7026539.9996	2602371.4221	PCC	564.57
30104	7026538.4855	2602361.5374	PCC	564.87
30105	7026536.9714	2602351.6527	PCC	565.17
30106	7026516.2762	2602375.0559	PCC	564.84
30107	7026514.7622	2602365.1712	PCC	565.14
30108	7026513.2481	2602355.2865	PCC	565.44
30109	7026492.5529	2602378.6896	PCC	565.03
30110	7026489.5248	2602358.9202	PCC	565.52
30111	7026465.8015	2602362.5540	PCC	565.27
30112	7026467.3156	2602372.4387	PCC	565.47
30113	7026468.8296	2602382.3234	PCC	565.17
30114	7026491.0389	2602368.8049	PCC	565.33

LEGEND

- PCC LONGITUDINAL CONSTRUCTIN/CONTRACTION JOINT (TIED)
- PCC TRANSVERSE CONTRACTION JOINT (DOWELED)
- ISOLATION JOINT

KEY NOTES

AS INDICATED BY: (00)

1. ODD SHAPED PANEL TO BE REINFORCED PER DETAIL A2/ALT-501

PSC
PARKHILL SMITH & COOPER

PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
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City of Rockwall
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ROCKWALL AIRPORT
PAVEMENT REHABILITATION
& DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

KEY PLAN

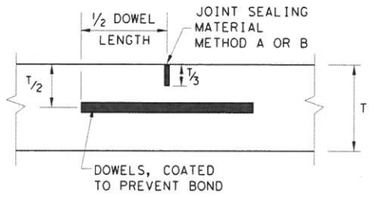
NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

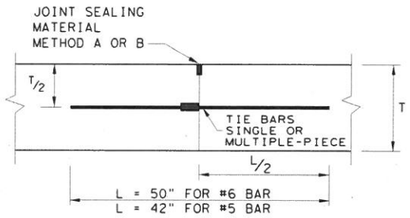
ADD ALT 1A
ENTRANCE ROAD
PCC JOINT PLAN

ALT-502

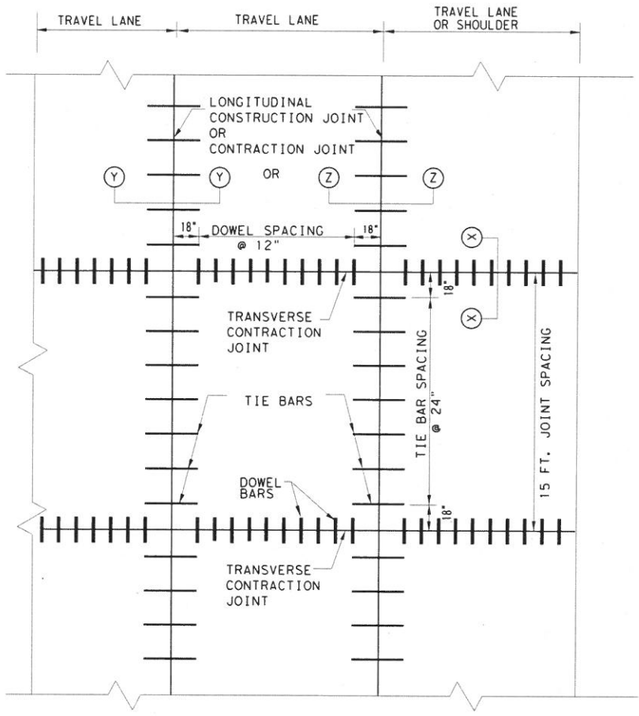
DATE:
FILE:



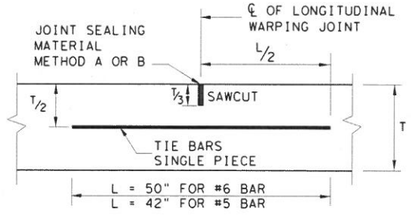
TRANSVERSE CONTRACTION JOINT
SECTION X-X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y-Y



TYPICAL PAVEMENT LAYOUT
PLAN VIEW (NOT TO SCALE)



LONGITUDINAL CONTRACTION JOINT
SECTION Z-Z

TABLE NO. 1 DOWELS (SMOOTH BARS)		
SLAB THICKNESS T (IN.)	BAR DIA. AND LENGTH	AVERAGE SPACING (IN.)
6 to 7.5	1" X 18"	12
8 to 10	1 ¼" X 18"	12
>= 10.5	1 ½" X 18"	12

TABLE NO. 2 TIE BARS (DEFORMED BARS)		
SLAB THICKNESS T (IN.)	BAR SIZE	AVERAGE SPACING (IN.)
6 to 7.5	#5	24
>= 8	#6	24

GENERAL NOTES

1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT ARE NOT COVERED BY THIS STANDARD.
2. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND LOAD TRANSFER DEVICES REFER TO THE GOVERNING SPECIFICATION FOR "CONCRETE PAVEMENT".
3. THE SPACING BETWEEN TRANSVERSE CONTRACTION JOINTS SHALL BE 15 FT. UNLESS OTHERWISE SHOWN IN THE PLANS.
4. TRANSVERSE CONSTRUCTION JOINTS MAY BE FORMED BY USE OF METAL OR WOOD FORMS EQUAL IN DEPTH TO THE DEPTH OF PAVEMENT, OR BY METHODS APPROVED BY THE ENGINEER.
5. USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL THE FORMED JOINTS.
6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
7. THE JOINT BETWEEN OUTSIDE LANE AND SHOULDER SHALL BE A LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z) UNLESS OTHERWISE SHOWN IN THE PLANS. THE SAW CUT DEPTH FOR THE LONGITUDIANL CONTRACTION JOINT (SECTION Z-Z) SHALL BE ONE THIRD OF THE SLABTHICKNESS (T/3).
8. WHEN TYING CONCRETE GUTTER AT A LONGITUDINAL JOINT, THE TIE BAR LENGTH OR POSITION MAY BE ADJUSTED. PROVIDE 3 IN. OF CONCRETE COVER FROM THE BACK OF GUTTER TO THE END OF TIE BAR.
9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN. 10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
10. WHEN AN MONOLITHIIC CURB IS SPECIFIED, THE JOINT IN THE CURB SHALL COINCIDE WITH PAVEMENT JOINTS AND MAY BE FORMED BY ANY MEANS APPROVED BY THE ENGINEER.
11. DOWEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1/4 IN. HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE SPECIFIED. WHERE DOWEL BAR BASKETS ARE USED, REMOVE THE SHIPPING WIRES.
12. THE DETAIL FOR JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."

SHEET 1 OF 2

Texas Department of Transportation | Design Division Standard

CONCRETE PAVEMENT DETAILS
CONTRACTION DESIGN
T-6 to 12 INCHES

CPCD-14

FILE: cpcd14.dgn	DW: TxDOT	DW: HC	DW: HC	CK: AN
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REVISIONS	DIST	COUNTY		SHEET NO.

PARKHILL SMITH & COOPER, INC. F-560
STATE OF TEXAS
DEREK W. MAYO
121115
LICENSED
PROFESSIONAL ENGINEER
08/11/17

PARKHILL SMITH & COOPER

City of Rockwall
The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

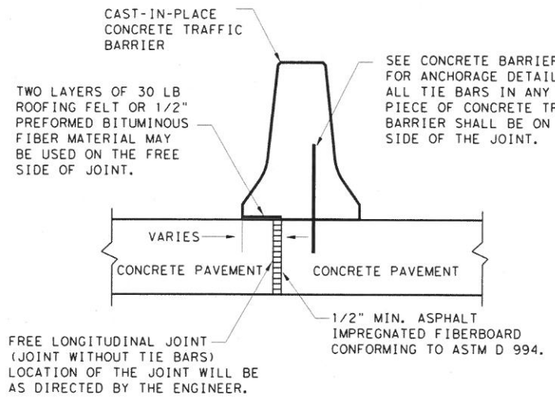
KEY PLAN

NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

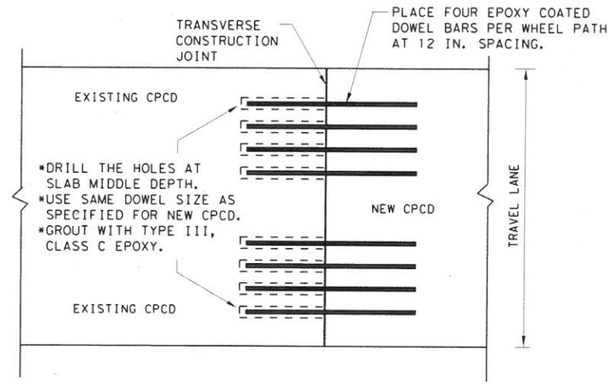
ISSUING OFFICE: AUSTIN — PROJECT NO: 4089.16

TxDOT PCC DETAILS
CPCD-14 (1 OF 2)

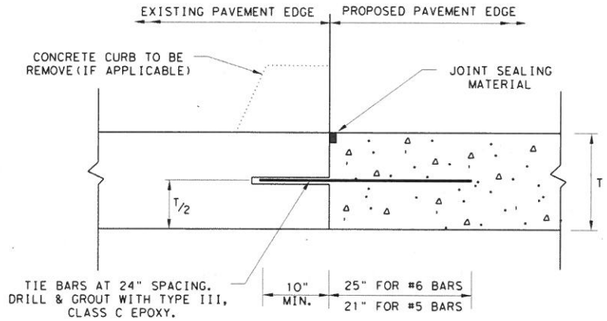
ALT-503



FREE LONGITUDINAL JOINT DETAIL

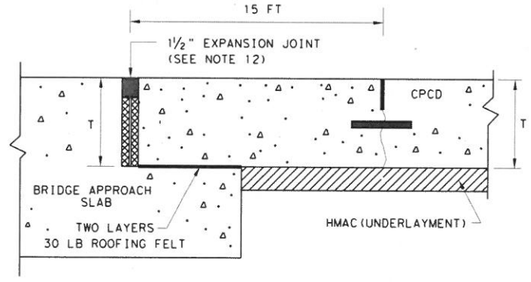


TRANSVERSE JOINT DETAIL
EXISTING CPCD TO NEW CPCD
PLAN VIEW (NOT TO SCALE)



1. BEFORE WIDENING WORK, DEMONSTRATE THAT THE BOND STRENGTH OF THE EPOXY-GROUTED TIE BARS MEETS THE REQUIREMENTS OF PULL-OUT TEST SPECIFIED IN ITEM 361.
2. SPACE TIE BARS AT 24" SPACING. USE #6 BARS FOR 8" AND THICKER SLABS, USE #5 BARS FOR LESS THAN 8" THICK SLABS.
3. THE TRANSVERSE JOINTS OF PROPOSED PAVEMENT SHALL COINCIDE WITH EXISTING PAVEMENT JOINTS UNLESS OTHERWISE SHOWN ON THE PLANS.

LONGITUDINAL WIDENING JOINT DETAIL



TRANSVERSE EXPANSION JOINT DETAIL
AT BRIDGE APPROACH

SHEET 2 OF 2

Texas Department of Transportation — Design Division Standard

CONCRETE PAVEMENT DETAILS
CONTRACTION DESIGN
T-6 to 12 INCHES

CPCD-14

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PSC PARKHILL SMITH & COOPER

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08/11/17

City of Rockwall
The New Horizon

ROCKWALL AIRPORT PAVEMENT REHABILITATION & DRAINAGE IMPROVEMENTS

1701 AIRPORT RD.
ROCKWALL, TEXAS

KEY PLAN

NO	DATE	DESCRIPTION
1	8/11/17	BIDDING DOCUMENTS

ISSUING OFFICE: AUSTIN — PROJECT NO: 4089.16

TxDOT PCC DETAILS
CPCD-14 (2 OF 2)

ALT-504

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DATE:
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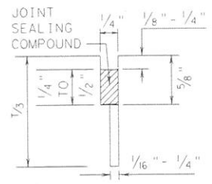
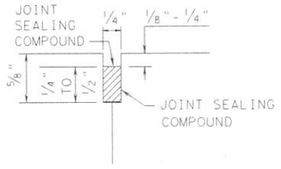
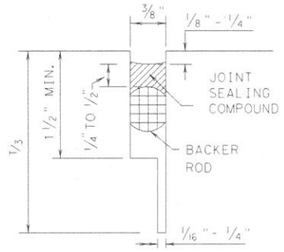
METHOD B: JOINT SEALING COMPOUND



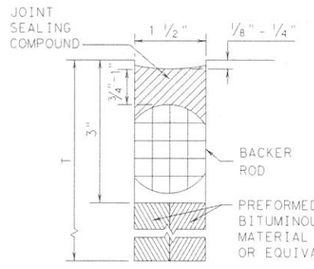
LONGITUDINAL SAWED CONTRACTION JOINT



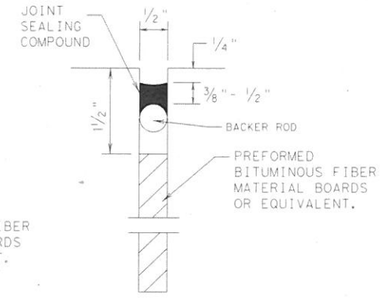
LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACTION JOINT

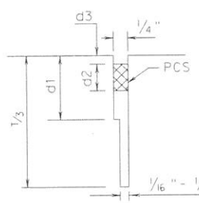


TRANSVERSE FORMED EXPANSION JOINT



FORMED ISOLATION JOINT

METHOD A: PREFORMED COMPRESSION SEALS (PCS) (DMS-6310 CLASS 6)



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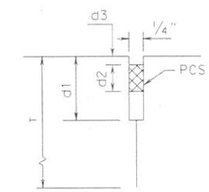
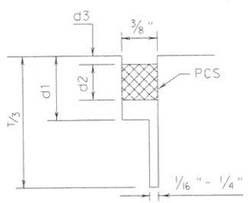
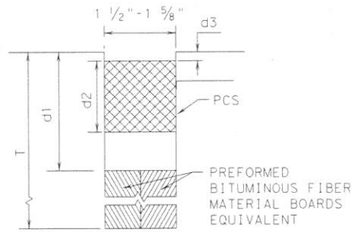


LONGITUDINAL CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACTION JOINT



TRANSVERSE FORMED EXPANSION JOINT

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
2. THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
3. THE JOINT RESERVOIR FOR SEALANT OR PCS SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS AND THE SAWED JOINTS.
4. DIMENSIONS d1, d2, AND d3 SHOWN IN METHOD A SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
5. REFER TO DMS-6310 "JOINT SEALANTS AND FILLERS" FOR THE CLASSIFICATIONS.
6. FOR SAWED LONGITUDINAL JOINT, LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT, USE JOINT SEALANT CLASS 5 OR 8 UNLESS OTHERWISE SHOWN ON THE PLAN OR APPROVED.
7. FOR TRANSVERSE SAWED CONTRACTION, TRANSVERSE FORMED EXPANSION JOINT, AND ISOLATION JOINT USE JOINT SEALANT CLASS 5 OR 8 AT NEW JOINTS. USE JOINT SEALANT CLASS 4, 5, 7, OR 8 FOR MAINTAINING EXISTING JOINTS.
8. THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 "CLEANING AND SEALING JOINTS" OR ITEM 713 "CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)".
9. ISOLATION JOINTS ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS THAT OCCUR BETWEEN A PAVEMENT AND A STRUCTURE. ISOLATION JOINTS MAY BE USED FOR BRIDGE ABUTMENTS, INTERSECTIONS, CURB AND GUTTER, OLD AND NEW PAVEMENTS, OR AROUND DRAINAGE INLETS, MANHOLES, FOOTINGS AND LIGHTING STRUCTURES.

Texas Department of Transportation | Design Division Standard

CONCRETE PAVING DETAILS

JOINT SEALS

JS-14

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1701 AIRPORT RD.
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ISSUING OFFICE: AUSTIN PROJECT NO: 4089.16

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ALT-505

FILE NAME: \\data1\projects\2016\4089.16\02_DSGN\02_DWG\050_CIVIL\ALT-503-505-4089.dwg LAYOUT NAME: ALT-505 PRINTED: Monday, August 21, 2017 - 3:25pm USER: DMayo