



MAYOR
SYLVESTER TURNER

CITY COUNCIL MEMBERS

District A - AMY PECK
 District B - TARSHA JACKSON
 District C - ABBIE KAMIN
 District D - CAROLYN EVANS-SHABAZZ
 District E - DAVE MARTIN
 District F - TIFFANY G. THOMAS
 District G - MARY NAN HUFFMAN
 District H - KARLA CISNEROS

CONTROLLER
CHRIS B. BROWN

CITY COUNCIL MEMBERS

District I - ROBERT GALLEGOS
 District J - EDWARD POLLARD
 District K - MARTHA CASTEX-TATUM

AT-LARGE POSITIONS

At-Large 1 - MIKE KNOX
 At-Large 2 - DAVID ROBINSON
 At-Large 3 - MICHAEL KUBOSH
 At-Large 4 - LETITIA PLUMMER
 At-Large 5 - SALLIE ALCORN

PLANS FOR CONSTRUCTION

OF

STANDIFER STREET AND LEE ROAD SINKHOLE REPAIR AND ENTRANCE REPAVING

AT

GEORGE BUSH INTERCONTINENTAL AIRPORT

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
STANDIFER STREET AND LEE ROAD SINKHOLE REPAIR AND ENTRANCE REPAVING COVER SHEET

PROJECT MGR: JLW
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO. 100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

HAS PROJECT NO. 219

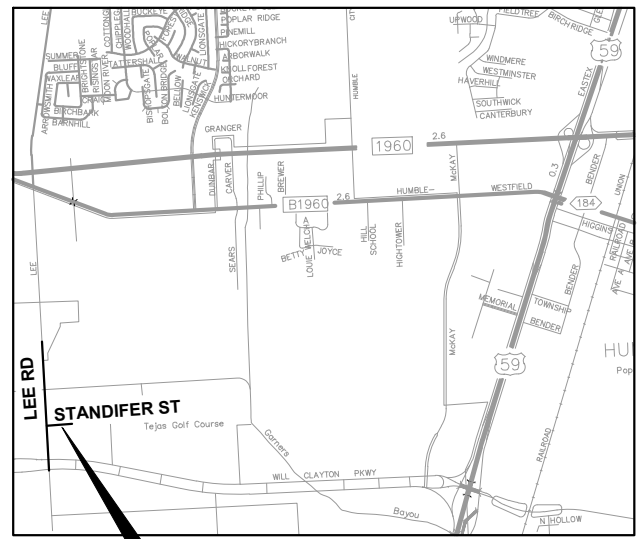
PREPARED BY

ATKINS
 Member of the SNC-Lavalin Group

JUNE 2023

ISSUED FOR PERMIT

VICINITY MAP
 N.T.S



PROJECT LOCATION

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM
 Recommended 06/03/2023
 Houston Airports System
 Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
 Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

DRAWING INDEX

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LEGEND

UTILITY	SYMBOL	SUE QUALITY LEVEL	DESCRIPTION	LINE STYLE
COMMUNICATION				
AT&T	T1 (T1)	B D	UNDERGROUND UNDERGROUND	— T1 — T1 — T1 — T1 — T1 — — (T1) — (T1) — (T1) — (T1) —
ELECTRIC				
CENTERPOINT ENERGY	E1 (OHE1)	B D	UNDERGROUND OVERHEAD	— E1 — E1 — E1 — E1 — E1 — — (OHE1) — (OHE1) — (OHE1) —
GAS PIPELINES				
CENTERPOINT ENERGY	G1 (G1)	B D	UNDERGROUND UNDERGROUND	— G1 — G1 — G1 — G1 — G1 — — (G1) — (G1) — (G1) — (G1) —
MAGELLAN	G2	B	UNDERGROUND	— G2 — G2 — G2 — G2 — G2 —
PUBLIC UTILITIES				
CITY OF HOUSTON	[SS1] (SS1)	C D	UNDERGROUND UNDERGROUND	— [SS1] — [SS1] — [SS1] — [SS1] — — (SS1) — (SS1) — (SS1) — (SS1) —
	[WW1] (WW1)	C D	UNDERGROUND UNDERGROUND	— [WW1] — [WW1] — [WW1] — [WW1] — — (WW1) — (WW1) — (WW1) — (WW1) —
	W1 (W1)	B D	UNDERGROUND UNDERGROUND	— W1 — W1 — W1 — W1 — W1 — — (W1) — (W1) — (W1) — (W1) —
POTABLE WATER	W2	B	UNDERGROUND	— W2 — W2 — W2 — W2 — W2 —

1. ALL SUE LEVEL D UTILITIES WERE DRAWN FROM RECORDS RESEARCH AND VISIBLE SURFACE FEATURES.
2. ALL SUE LEVEL C UTILITIES ARE DRAW FROM TOPOGRAPHIC SURVEY.
3. ALL SUE LEVEL B UTILITIES ARE OBTAINED BY GEOPHYSICAL METHODS.



HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX



LOCAL OFFICE:
920 MEMORIAL CITY WAY
STE. 400
HOUSTON, TX 77024
TEL: (713) 576-8500
ATKINS NORTH AMERICA PE FIRM REG. #F-000474
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REVISIONS

NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 INDEX OF DRAWINGS AND LEGEND**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



APPROVED BY:

 DIRECTOR
HOUSTON AIRPORT SYSTEM

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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended
Houston Airports System
Director or Designated Representative
08/03/2023 DATE
REVIEWED / NO EXCEPTIONS TAKEN
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Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authority Having Jurisdiction (AHJ).

G-002

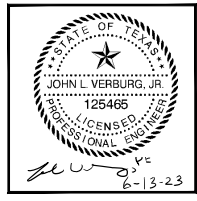
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REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 GENERAL NOTES - 1**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	N/A
DATE:	06/12/2023



APPROVED BY:	
DIRECTOR HOUSTON AIRPORT SYSTEM	
PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM
 Recommended 06/13/2023
 Houston Airports System
 Director or Designated Representative DATE

REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HABS approved standards.
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GENERAL NOTES- INSIDE CITY LIMITS

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING AND TRAFFIC PUBLISHED BY HOUSTON PUBLIC WORKS.
2. THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 11 OF THE LATEST EDITION OF THE PUBLICATION INFRASTRUCTURE DESIGN MANUAL, PUBLISHED BY HOUSTON PUBLIC WORKS. SOILS REPORT WAS PREPARED BY AVILES ENGINEERING CORP. REPORT NO. Q148-19, DATED FEBRUARY 2020.
3. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE §18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE HOUSTON PUBLIC WORKS, STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC REFERENCED ABOVE, AT NO ADDITIONAL COST.
5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
6. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
7. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION. CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAWS CONCERNING EXCAVATION, TRENCHING AND SHORING AS SPECIFIED IN CITY OF HOUSTON ORDINANCE #87-1457.
8. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS AND RECORD AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED UP DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE HOUSTON AIRPORT SYSTEM ASSET MANAGER.
9. EXISTING AND PROPOSED 24" RCP OWNED AND MAINTAINED BY HOUSTON AIRPORT SYSTEM.
10. THE INITIAL PAVEMENT DESIGN PRESENTED IN THE GEOTECHNICAL REPORT HAS BEEN AMENDED PER THE FURNISHED DRAWING SET AND GEOTECHNICAL REPORT AMENDMENT 1. ALL OTHER INVESTIGATIVE INFORMATION CONTAINED WITHIN THE REPORT REMAINS.

STREET & BRIDGE CONSTRUCTION NOTES

1. FILL AREAS ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND EACH COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY PRIOR TO INSTALLATION OF WATER LINE AND FILL AREA SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.
2. UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURBED INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
3. ANY EXISTING PAVEMENTS, DRIVEWAYS, CURBS, AND/OR SIDEWALKS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH ALL APPLICABLE CURRENT CITY OF HOUSTON STANDARDS.
4. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY UPON COMPLETION OF JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.
5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO SATISFACTION OF THE OWNING AUTHORITY.
6. EXPOSED 15' OF REINFORCING STEEL AT PROPOSED SAWED JOINT IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BARS 24" LONG 24" C-C DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB WITH "PO ROC" OR EQUAL..
7. WHEEL CHAIR RAMPS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON STANDARDS AT ALL INTERSECTIONS WHERE SIDEWALKS EXIST AND THE EXISTING CURB OR SIDEWALK IS DAMAGED OR REMOVED DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES TO EXISTING WATER, WASTEWATER, STORM SEWER AND TRAFFIC SIGNAL CONDUITS, ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE HOUSTON PUBLIC WORKS "STANDARD CONSTRUCTION SPECIFICATIONS" WITH LATEST ADDENDA AND AMENDMENTS THERETO, AT NO COST TO THE HOUSTON AIRPORT SYSTEM.
9. PRIOR TO STREET CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE HOUSTON AIRPORT SYSTEM BUILDING STANDARDS GROUP AT (PHONE) 281-233-1906 AND COMPLY WITH ALL REQUIREMENTS FOR THE ISSUANCE OF NECESSARY PERMITS/WORK ORDERS FOR STREET CONSTRUCTION.
10. DOUBLE REFLECTORIZED BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATIONS BY THE PAVING CONTRACTOR. HYDRANTS LOCATED AT INTERSECTIONS SHALL HAVE A BUTTON PLACED ON EACH STREET.

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TRAFFIC NOTES

CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS WITH THE MOBILITY PERMIT APPLICATION. THE PLANS SHALL BE DRAWN TO SCALE AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS.

THE GENERAL NOTES THAT SHALL BE INCLUDED ON THE TRAFFIC CONTROL PLAN CAN BE FOUND IN CHAPTER 15 (15.12 TRAFFIC CONTROL PLAN) OF THE CITY OF HOUSTON'S (CITY) INFRASTRUCTURE DESIGN MANUAL (IDM). BELOW ARE SEVERAL KEY NOTES FROM THE IDM TO BE AWARE OF:

- 1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST VERSION OF THE TMUTCD.
3. NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM MONDAY THRU FRIDAY WITHOUT APPROVAL OF THE CITY TRAFFIC ENGINEER.
4. NO WORK SHALL BE PERFORMED IN THE RESIDENTIAL AREAS FROM 7:00 PM TO 7:00 AM.
5. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF THROUGH LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLAN SHALL INCLUDE ONE-WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO THE BUS STOPS.
6. CONTRACTOR SHALL MAINTAIN TRAFFIC LANES AND DETOURS ACCORDING TO TRAFFIC CONTROL PLANS DURING WORKING HOURS.
7. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
8. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF TRAFFIC CONTROL PLANS TO THE CITY OF HOUSTON PROJECT MANAGER FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION. THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SHALL BE SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. TRANSPORTATION & DRAINAGE OPERATIONS REPRESENTATIVE APPROVAL IN REQUIRED TO ACCEPT THE PROPOSED CHANGES.
9. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE FACILITY CLOSURE PERMITS FROM TRANSPORTATION & DRAINAGE OPERATIONS BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN BUSINESS DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SCHEDULE WITH THE APPLICATION.
10. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES.
11. DURING PAVEMENT SURFACE RESTORATION PROJECTS; THE CONTRACTOR SHALL NOT OPEN CLOSED LANES UNTIL THE PAVEMENT SURFACE HAS CURED ENOUGH TO ALLOW VEHICULAR TRAFFIC ACCORDING TO CITY OF HOUSTON STANDARD SPECIFICATIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL CONSTRUCTION ACTIVITIES WITH STAKE HOLDERS IN THE VICINITY INCLUDING EMERGENCY RESPONSE AGENCIES SUCH AS HOUSTON POLICE DEPARTMENT HOUSTON FIRE DEPARTMENT, AND METROPOLITAN TRANSIT AUTHORITY.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ISSUING ALL WORK DIRECTIVES TO ALL SUB-CONTRACTORS, UTILITY COMPANIES, AND ALL OTHER ENTITIES PERFORMING CONSTRUCTION WORK ASSOCIATED WITH THE PROJECT.
14. NOTHING IN THESE NOTES OR PLANS SHALL RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT; INCLUDING SAFETY OF ALL MODES OF TRANSPORTATION, PERSONS, AND PROPERTY, AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS.
15. THE TRANSPORTATION & DRAINAGE OPERATIONS (MOBILITY PERMITS GROUP) PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER HAVE THE RIGHT TO DEMAND THE INSTALLATION OF ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS TO THESE PLANS AND NOTES, AS DEEMED NECESSARY TO PROMOTE THE SAFE AND ORDERLY FLOW OF TRAFFIC, INCLUDING PEDESTRIANS AND BICYCLES, THROUGH THE CONSTRUCTION WORK ZONE. THE CONTRACTOR SHALL COMPLY WITH THESE ADDITIONAL REQUESTS OR MODIFICATIONS WITH DUE DILIGENCE.

- 16. ALL EXISTING TRAFFIC CONTROL SIGNS AND PAVEMENT MARKING SHALL BE MAINTAINED IN VISIBLE LOCATIONS DURING CONSTRUCTION UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF HOUSTON PROJECT MANAGER. THE CONTRACTOR SHALL RESTORE OR REPLACE (AT THE DISCRETION OF THE CITY TRAFFIC ENGINEER) ANY PAVEMENT MARKING OR SIGNING DAMAGED DURING CONSTRUCTION OPERATIONS, INCLUDING RAISED PAVEMENT MARKERS (RPMs).
17. WHEN ENTERING OR LEAVING ROADWAYS CARRYING PUBLIC TRAFFIC, THE CONTRACTORS EQUIPMENT, WHETHER EMPTY OR LOADED SHALL IN ALL CASES YIELD TO PUBLIC TRAFFIC WITH THE ASSISTANCE OF CONTRACTOR PROVIDED CERTIFIED FLAGGER/PEACE OFFICER.
18. ACCESS TO DRIVEWAYS ADJACENT TO THE CONSTRUCTION WORK ZONE SHALL BE MAINTAINED AT ALL TIMES AS MUCH AS POSSIBLE. ADDITIONAL CONES AND/OR DELINEATORS MAY BE REQUIRED TO DELINEATE THE DRIVEWAY ACCESS ROUTE THROUGH THE CONSTRUCTION WORK ZONE. A MINIMUM OF ONE TRAVEL LANE SHALL BE MAINTAINED ACROSS THE DRIVEWAYS, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF HOUSTON PROJECT MANAGER.
19. SPILLAGE RESULTING FROM HAULING OPERATION S ALONG OR ACROSS ANY PUBLIC TRAVELED WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL SUBMIT AND APPLICATION FOR TEMPORARY PARKING RESTRICTIONS IF THERE ARE PARKING METERS LOCATED AT THE PROPOSED LANE CLOSURES FROM PARKING MANAGEMENT DIVISION (832-393-8690) AT LEAST TEN BUSINESS DAYS BEFORE IMPLEMENTATION OF LANE CLOSURES. IN ADDITION, TEMPORARY NO PARKING SIGNS SHALL BE POSTED 24 HOURS PRIOR TO COMMENCEMENT OF WORK.
21. ADDITIONAL OFF DUTY POLICE OFFICERS/FLAGGERS MAY BE REQUESTED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED AT THE DISCRETION OF THE CITY PROJECT MANAGER EVEN IF THEY ARE NOT SPECIFICALLY IDENTIFIED ON THE PROJECT PLANS.
22. THE CONTRACTOR SHALL REPLACE WITHIN 72 HOURS, ALL TRAFFIC SIGNAL LOOP DETECTORS DAMAGED DURING CONSTRUCTION.
23. IN GENERAL, A SOLAR POWERED FLASHING ARROW BOARD SHALL BE REQUIRED ON ALL MAJOR THOROUGHFARE LANE CLOSURES. EXCEPTIONS TO FLASHING ARROW BOARDS AND/OR IMPLEMENTATION ON RESIDENTIAL LANE CLOSURES SHALL BE APPROVED BY THE CITY TRAFFIC ENGINEER.
24. APPROVED TRAFFIC CONTROL PLAN SHALL BE IN PLACE BEFORE STARTING ANY EXCAVATION

SWPPP CONSTRUCTION NOTES

- 1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEPED BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FORM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
• DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
• AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
• STRUCTURAL CONTROL MEASURES.
• LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

AT&T TEXAS/SWBT FACILITIES

- 1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713)567-4552 OR E-MAIL HIM AT RL7259@ATT.COM, IF CABLE LOCATE REQUESTS ARE NOT COMPLETED FOR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES

CAUTION: UNDERGROUND GAS FACILITIES

THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
• WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 207-5463 OR (713-945-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
• WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
• WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
• FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-3552 OR (713) 207-4200.
THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
• ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
• OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769.

CAUTION: UNDERGROUND PIPELINE

PROJECT AREA CONTAINS UNDERGROUND PIPELINE IN THE LOCATION AS NOTED ON THE PLANS. CONTACT ROBERT HISER WITH MAGELLAN MIDSTREAM PARTNERS, L.P. AT (918) 574-7341 FOR COORDINATION OF WORK ABOVE THE PIPELINE. CONTRACTOR MUST FOLLOW ALL NECESSARY REQUIREMENTS OF THE PIPELINE COMPANY FOR SAFETY WHEN EXCAVATING ABOVE OR NEAR ITS PIPELINE.

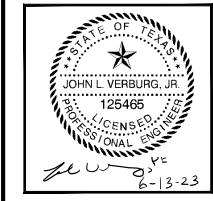
CITY OF HOUSTON HOUSTON AIRPORTS SYSTEM Recommended 08/03/2023 Houston Airports System DATE Director or Designated Representative
REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent and to the best of our knowledge appear to be in compliance with current HAZ approved standards.
Performance and approval of this review does not, however, release the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

HOUSTON AIRPORT SYSTEM GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX
ATKINS
LOCAL OFFICE: 520 MEMORIAL CITY WAY STE. 400 HOUSTON, TX 77024 TEL: (713) 576-8500
ATKINS NORTH AMERICA PE FIRM REG. #F-000474 WWW.ATKINSGLOBAL.COM

Table with 3 columns: NO., DESCRIPTION, DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH) STANDIFER STREET AND LEE ROAD SINKHOLE REPAIR AND ENTRANCE REPAVING GENERAL NOTES - 2

Table with 2 columns: PROJECT MGR, DESIGNER, DRAWN BY, CHECK BY, SCALE, DATE



APPROVED BY: DIRECTOR HOUSTON AIRPORT SYSTEM

Table with 2 columns: PROJECT NO., A.I.P. NO., C.I.P. NO., H.A.S. NO., SHEET NO.

G-004

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REVISIONS

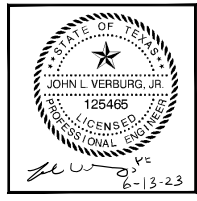
NO.	DESCRIPTION	DATE	BY

SUMMARY OF BID QUANTITIES

Item No.	Spec Item	Description	Unit	Estimated Quantity
1	01502-100	Mobilization	LS	1
2	01554-100	Installation or Replacement of Permanent Signs (Signs, Poles, Anchors, and Hardware Provided by City)	EA	2
3	01555-100	Traffic Control and Regulation	LS	1
4	01570-100	Implementation and Maintenance of Storm Water Pollution Prevention Structures	LS	1
5	02086-100	Adjust Existing Manhole Frame and Cover to New Grade	EA	2
6	02221-250	Remove and Dispose of Existing Concrete Curb or Curb and Gutter	LF	315
7	02221-252	Remove and Dispose of Asphaltic Surface with or without Base	SY	2,000
8	02221-521	Remove and Dispose of 24-inch to 36-inch Storm Sewers and Leads	LF	180
9	02315-100	Roadway Excavation with or without Subgrade	CY	750
10	02319-100	Borrow/Embankment	CY	400
11	02336-106	Lime Stabilized Subgrade, 8-inch	SY	1,200
12	02336-300	Lime Slurry	TON	28
13	02631-105	24-inch Diameter RCP Storm Sewer by Open Cut	LF	180
14	02633-800	Headwall Including Parallel Wingwalls (Precast), Safety End Treatment	EA	2
15	02751-111	11-inch Reinforced Concrete Pavement	SY	1,050
16	02764-200	Raised Reflective Pavement Marker, Double-Sided (Yellow)	EA	250
17	02767-100	Reflectorized Paint on 6-inch Curb, Yellow	LF	190
18	02767-301	Thermoplastic Pavement Marking, Elongated Word "ONLY"	EA	2
19	02767-302L	Thermoplastic Pavement Marking, Turning Arrow (Left)	EA	1
20	02767-302R	Thermoplastic Pavement Marking, Turning Arrow (Right)	EA	1
21	02767-405	Thermoplastic Pavement Marking (4-inch-wide) White	LF	325
22	02767-409W	Thermoplastic Pavement Marking (24-inch-wide) White	LF	24
23	02767-409Y	Thermoplastic Pavement Marking (24-inch-wide) Yellow	LF	75
24	02771-100	6-inch Concrete Curb	LF	660
25	02921-100	Hydro Mulch Seeding	AC	0

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 SUMMARY OF QUANTITIES**

PROJECT MGR: JLV
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:

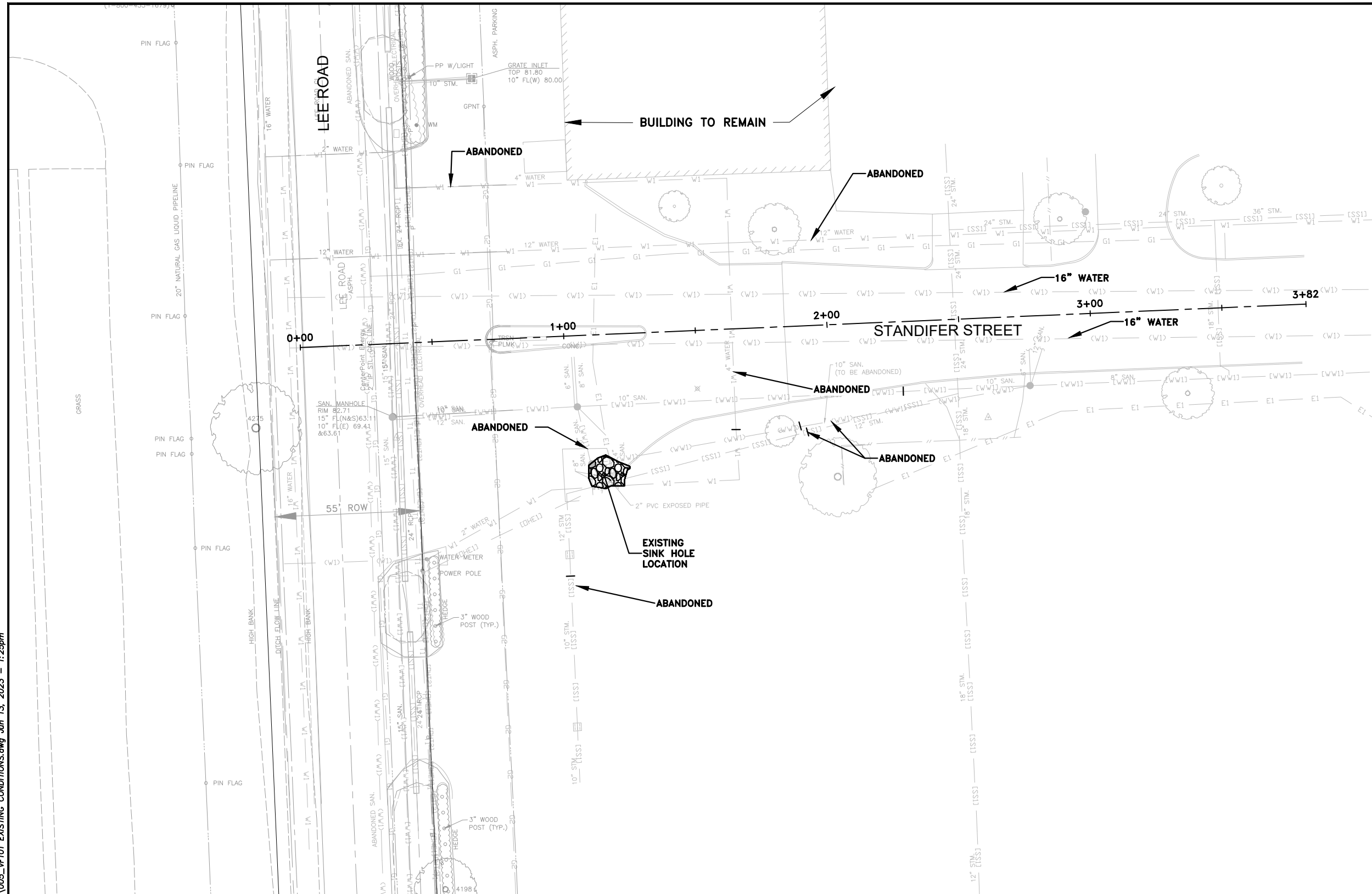
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO. 100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM
 Recommended
 Houston Airports System
 Director or Designated Representative
 06/09/2023
 DATE

REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current H&S approved standards.
 Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

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LEGEND

SINKHOLE

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
2. ALL COORDINATES SHOWN HEREON HAVE BEEN SCALED UP TO SURFACE VALUES USING A SURFACE TO CONVERT TO GRID COORDINATES US THE FOLLOWING FORMULA:
SURFACE X 0.999923616683 = GRID (UNIT OF MEASURE = U.S. SURVEY FOOT.)
3. ALL ELEVATIONS ARE REFERENCED TO NAVD 88, NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR VERTICAL CONTROL. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)

HOUSTON AIRPORT SYSTEM
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

ATKINS

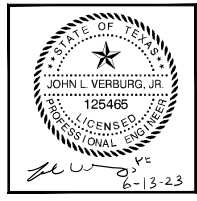
LOCAL OFFICE:
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 TEL: (713) 576-8500
 ATKINS NORTH
 AMERICA PE FIRM REG.
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REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 EXISTING CONDITIONS PLAN**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



**CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM**

Recommended: DATE: 06/13/2023
 Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
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0 10 20 40
 SCALE : 1" = 20'

APPROVED BY:

DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
 100066835

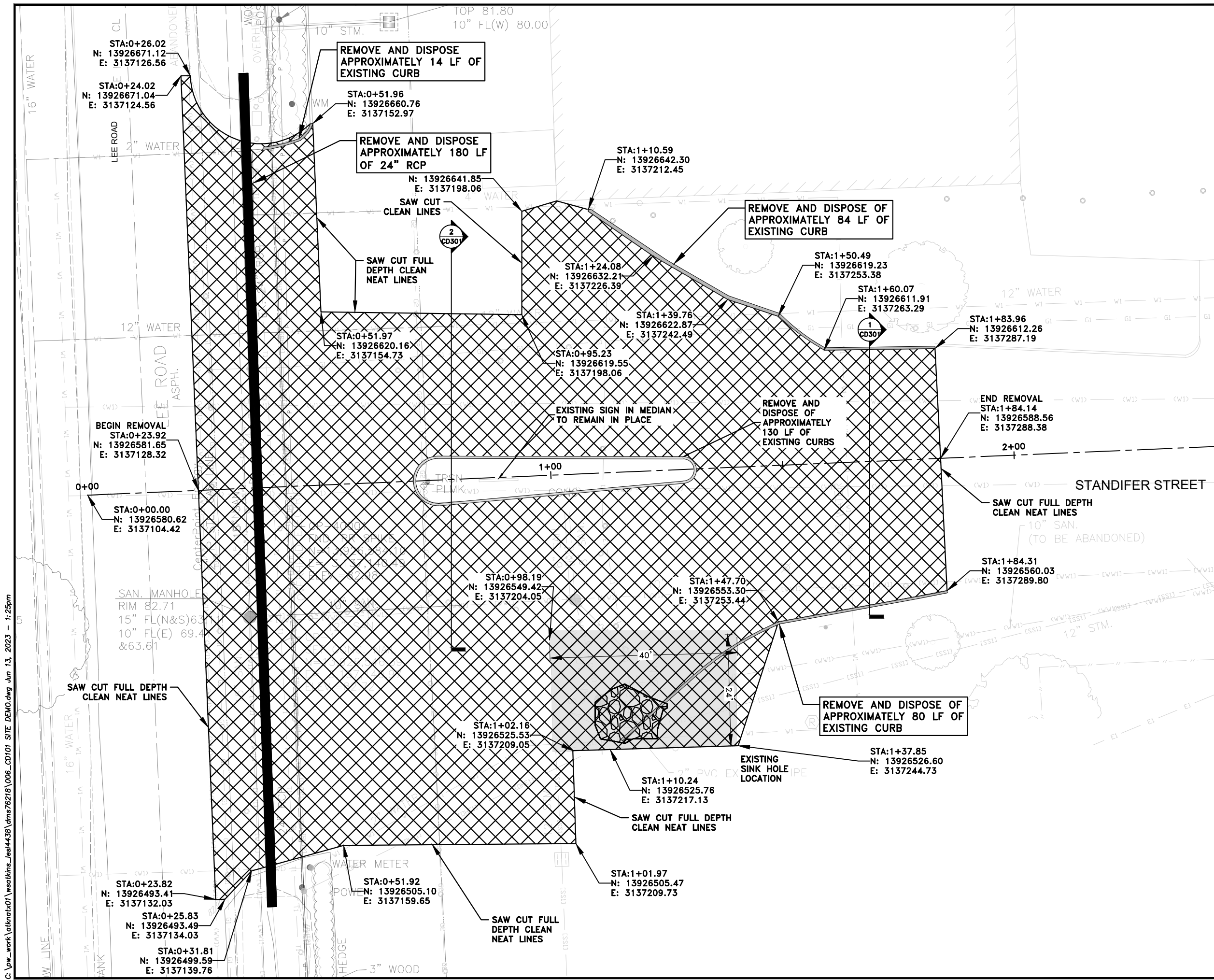
A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

VF101



LEGEND

- SINKHOLE
- EXCAVATE ALL POROUS, WEAK, UNSTABLE MATERIAL AROUND EXISTING SINKHOLE. VOLUME TO BE BACKFILLED WITH SELECT FILL MATERIAL.
- ASPHALT PAVEMENT REMOVAL BOUNDARY
- CURB REMOVAL

- ### GENERAL NOTES
- CONTRACTOR SHALL VERIFY UTILITY SERVICE LINES THAT SERVICED THE PREVIOUSLY DEMOLISHED BUILDING ARE ABANDONED PRIOR TO DEMOLITION AND SINKHOLE REPAIR ACTIVITIES.
 - MINIMUM EXCAVATION DEPTH IS 9 FEET OR 2 FEET BELOW SINKHOLE BOTTOM.

- ### SURVEY NOTES
- ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTREA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,035.65 E=3,129,527.22
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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM

Recommended _____ DATE 08/03/2023
Houston Airports System Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
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APPROVED BY: _____

DIRECTOR HOUSTON AIRPORTS SYSTEM

PROJECT NO. 100066835

A.I.P. NO. _____

C.I.P. NO. _____

H.A.S. NO. _____

SHEET NO. _____

0 5 10 20

SCALE : 1" = 10'

HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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LOCAL OFFICE:
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REVISIONS

NO.	DESCRIPTION	DATE BY

**STANDIFER STREET AND LEE ROAD
SINKHOLE REPAIR AND ENTRANCE REPAVING
DEMOLITION PLAN**

PROJECT MGR: JLV
DESIGNER: EW
DRAWN BY: MRT
CHECK BY: EW
SCALE:
DATE: 06/12/2023

APPROVED BY: _____

DIRECTOR HOUSTON AIRPORTS SYSTEM

PROJECT NO. 100066835

A.I.P. NO. _____

C.I.P. NO. _____

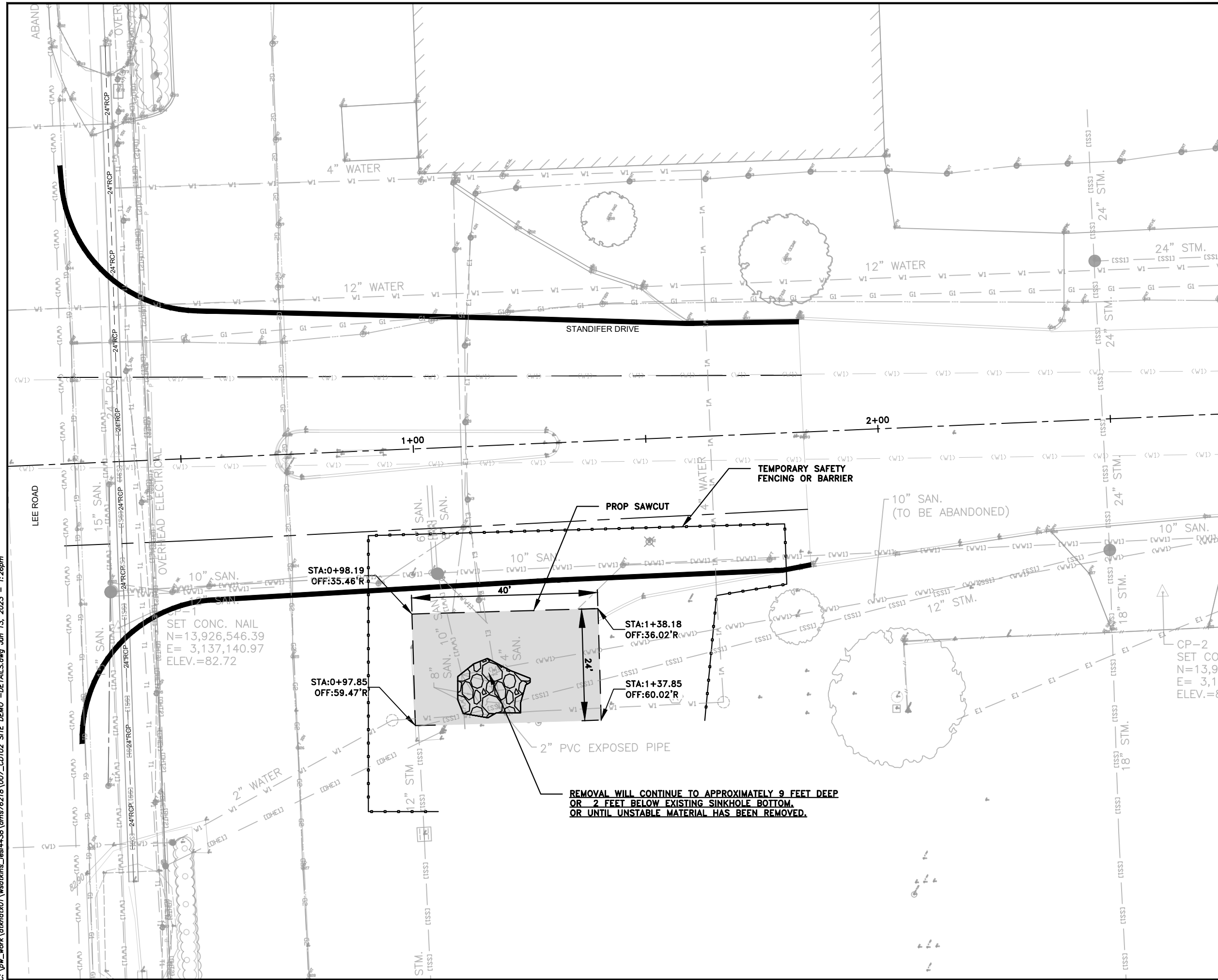
H.A.S. NO. _____

SHEET NO. _____

CD101

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LEGEND

- SINKHOLE
- EXCAVATE ALL POROUS, WEAK, UNSTABLE MATERIAL AROUND EXISTING SINKHOLE. VOLUME TO BE BACKFILLED WITH SELECT FILL MATERIAL.

SINKHOLE REPAIR NOTES

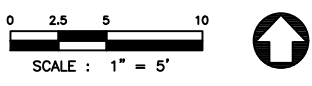
1. ESTABLISH PHASE 1 OF TCP TO MOVE ALL TRAFFIC ALONG NORTH SIDE OF MEDIAN.
2. PLACE SAFETY FENCING OR BARRIER AROUND THE SINKHOLE AREA.
3. THE SINKHOLE HAS BEEN PREVIOUSLY REPAIRED AS A TEMPORARY REPAIR. REMOVE ALL MATERIAL TO THE DIMENSIONS SHOWN.
4. PREVIOUSLY ABANDONED UTILITY LINES WITHIN THE SINKHOLE EXCAVATION AREA, IF CURRENTLY REMAINING, WILL BE EXCAVATED AND REMOVED ALONG WITH THE SOIL MATERIAL DURING EXCAVATION AND ARE INCIDENTAL TO EXCAVATION.
5. BEGIN TO BACKFILL EXCAVATED AREA IN 1.5' LIFTS TO ENSURE PROPER COMPACTION WITH SELECT FILL/STURDY CLAY TO MATCH EXISTING PAVEMENT ELEVATION.
6. REMOVE SAFETY FENCING AROUND SINKHOLE ONCE BACKFILL IS COMPLETE.
7. MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION TO PREVENT PONDING.
8. CONTINUE DEMO PLAN REMOVAL OF EXISTING PAVEMENT PER DEMO PLAN, CD101.

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
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CITY OF HOUSTON
HOUSTON AIRPORTS SYSTEM
Recommended
Houston Airports System
Director or Designated Representative
DATE 06/03/2023

REVIEWED / NO EXCEPTIONS TAKEN
The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HSA approved standards.
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HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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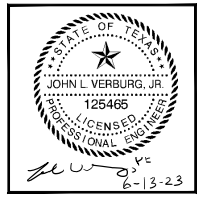
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REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
STANDIFER STREET AND LEE ROAD
SINKHOLE REPAIR AND ENTRANCE REPAVING
SINKHOLE REPAIR PLAN**

PROJECT MGR: JLW
DESIGNER: EW
DRAWN BY: MRT
CHECK BY: EW
SCALE:
DATE: 06/12/2023



APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100066835

A.I.P. NO.

C.I.P. NO.

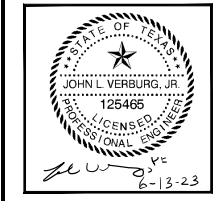
H.A.S. NO.

SHEET NO.

REVISIONS		
NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PROPOSED DEMOLITION SECTIONS**

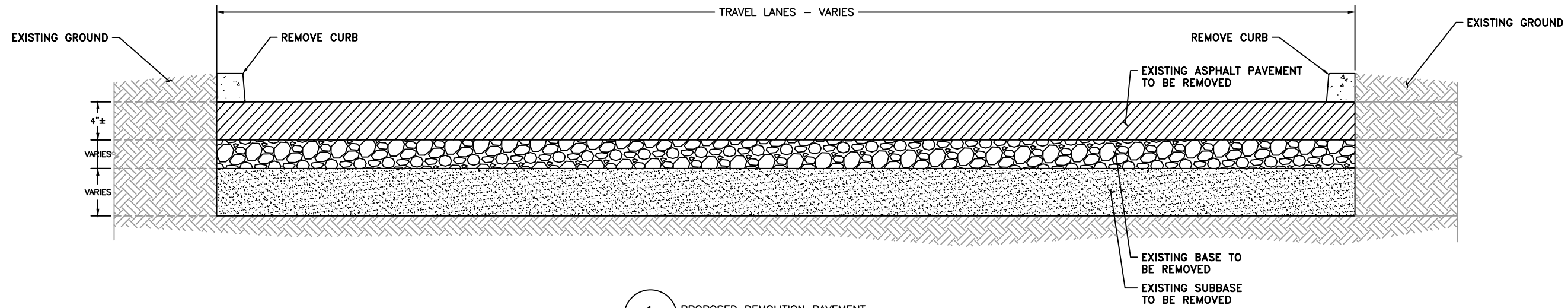
PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



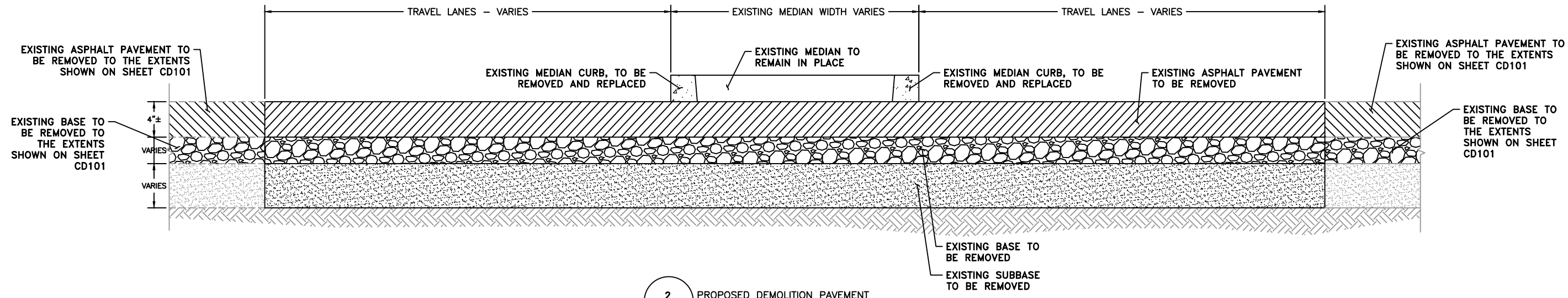
APPROVED BY: _____

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	



1 PROPOSED DEMOLITION PAVEMENT
 CD301 SCALE: NTS



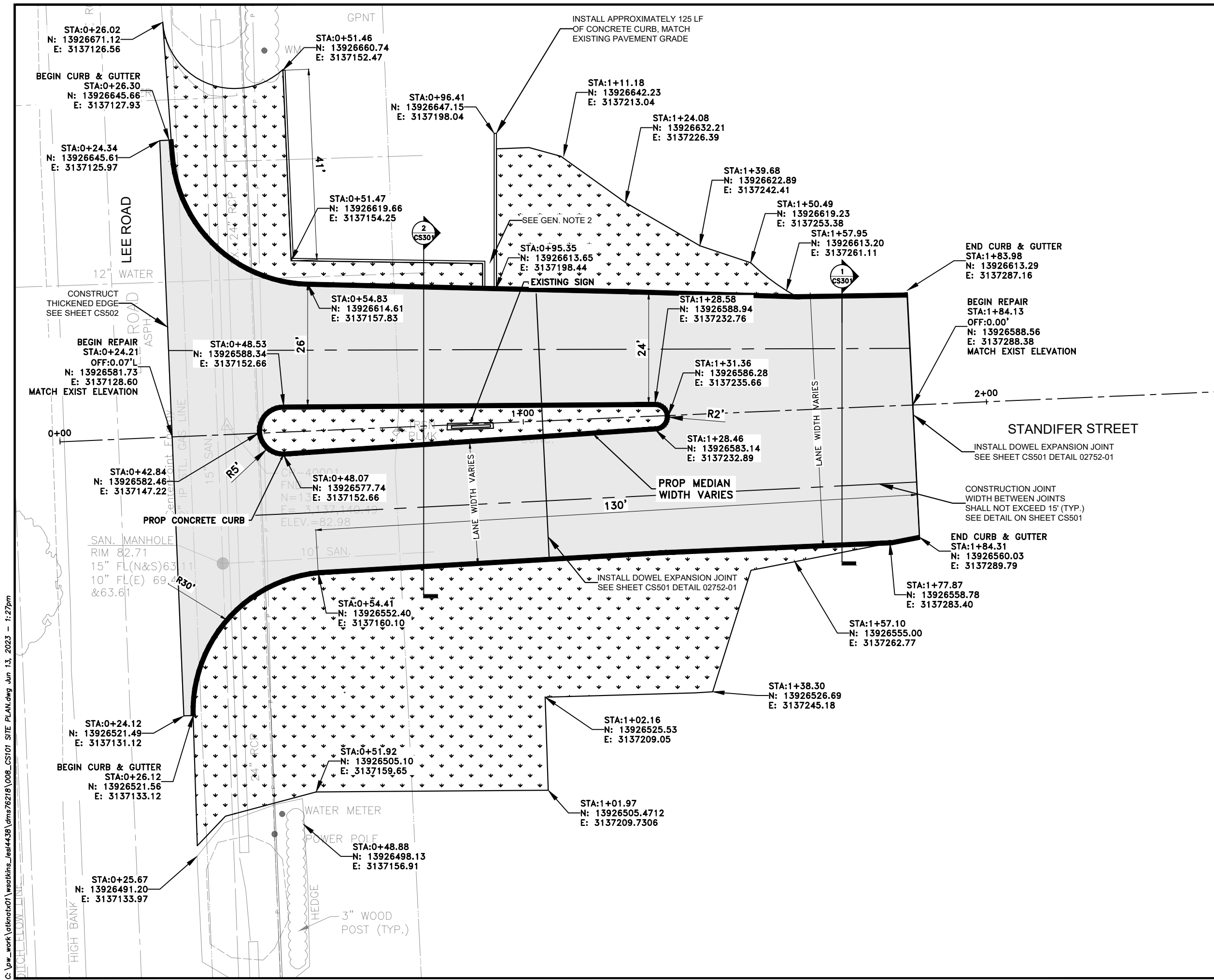
2 PROPOSED DEMOLITION PAVEMENT
 CD301 SCALE: NTS

- NOTES:
1. DEPTH OF DEMOLITION TO MATCH JRCP THICKNESS. SEE DETAIL 1 SHEET CS301.
 2. PAVEMENT SECTION REPRESENTS TYPICAL EXISTING THICKNESS. SEE SHEET CD101 FOR GEOMETRY DIMENSIONS.

CITY OF HOUSTON
 HOUSTON AIRPORT SYSTEM
 Recommended _____ DATE 08/03/2023
 Houston Airport System Director or Designated Representative

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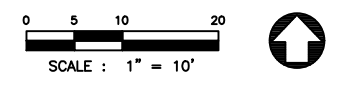


LEGEND

- GRASS AREA
- PROP PAVEMENT

- ### GENERAL NOTES
- SEE SHEETS CS501 AND CS502 FOR CONCRETE PAVEMENT DETAILS.
 - DRAINAGE FLUME TO BE ASPHALT PAVED INCIDENTAL TO THE INSTALLATION OF ADJACENT CURBING.

- ### SURVEY NOTES
- ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTREA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,035.65 E=3,129,527.22
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HOUSTON AIRPORT SYSTEM
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

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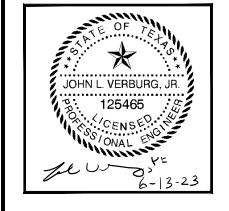
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REVISIONS

NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PROPOSED PAVEMENT LAYOUT**

PROJECT MGR: JLW
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:

DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
 100066835

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

CITY OF HOUSTON
 HOUSTON AIRPORT SYSTEM

Recommended _____ DATE 08/03/2023
 Houston Airports System Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
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HOUSTON AIRPORT SYSTEM
GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

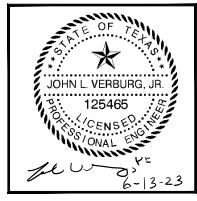
ATKINS

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AMERICA PE FIRM REG.
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REVISIONS		
NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PROPOSED PAVEMENT SECTIONS**

PROJECT MGR: JLV
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:

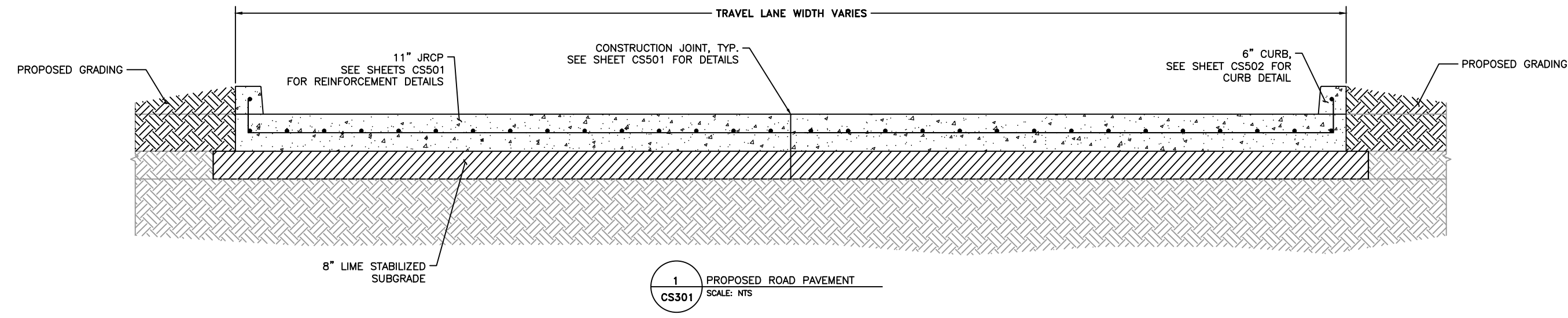
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO. 100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

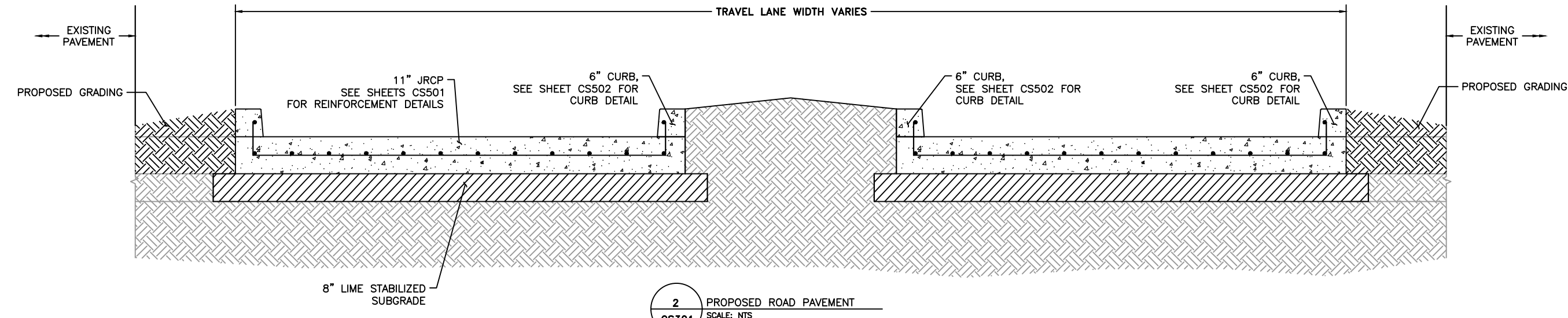
CS301

NOTE:

1. CONCRETE PAVEMENT SHALL HAVE A MINIMUM 28-DAY CONCRETE COMPRESSIVE STRENGTH OF 4,000 PSI AND A 28-DAY FLEXURAL STRENGTH OF 600 PSI PER COH SPEC 02751.



1
CS301 PROPOSED ROAD PAVEMENT
 SCALE: NTS



2
CS301 PROPOSED ROAD PAVEMENT
 SCALE: NTS

NOTES:

1. PROPOSED PAVEMENT SECTION IS FOR TYPICAL THICKNESS. SEE SHEET CS101 FOR GEOMETRY DIMENSIONS.

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM
 Recommended
 Houston Airports System
 Director or Designated Representative
 DATE: 08/03/2023

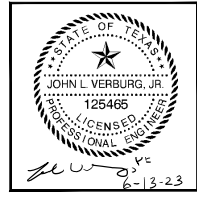
REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAZ approved standards.
 Performance and approval of this review does not relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

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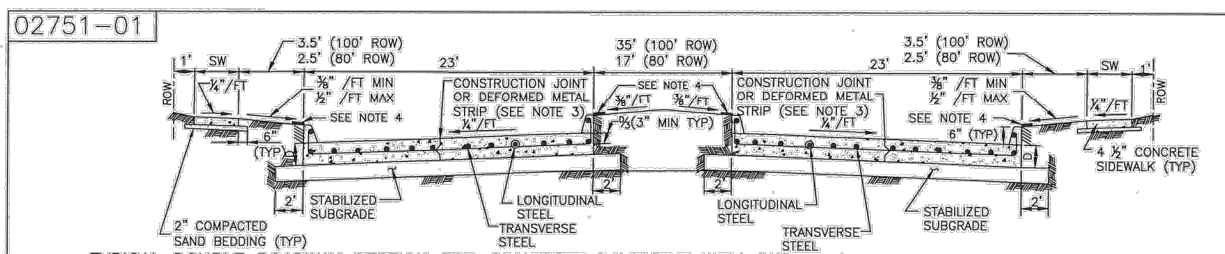
REVISIONS		
NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 TYPICAL PAVEMENT DETAILS**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023

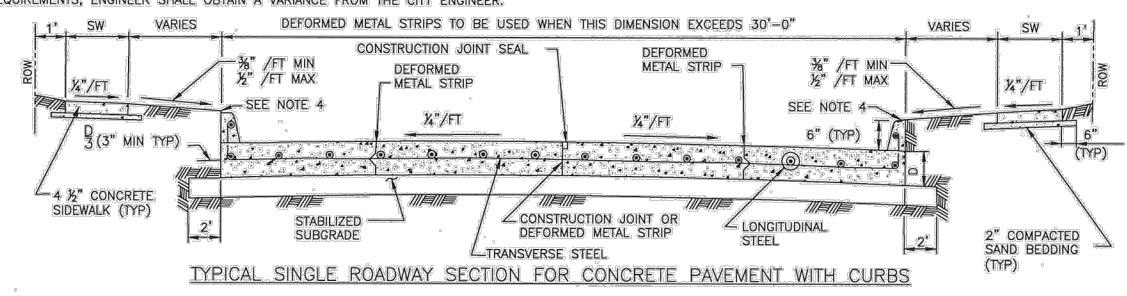


APPROVED BY:	
DIRECTOR	HOUSTON AIRPORT SYSTEM
PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	



TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS NOTES:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'-0".
2. ALL EARTHEN AREAS ARE TO BE HYDROMULCHED UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. CONTRACTOR MAY SAW CUT IN LIEU OF DEFORMED METAL STRIP.
4. USE STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
5. AN EQUAL OR LARGER AREA OF WELDED REINFORCEMENT BAR CONFORMING TO ASTM A497, MAY BE SUBSTITUTED FOR REBARS LISTED IN TABLE 1.
6. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IDM REQUIREMENTS, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.



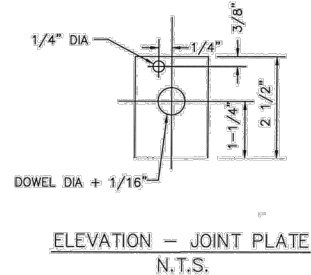
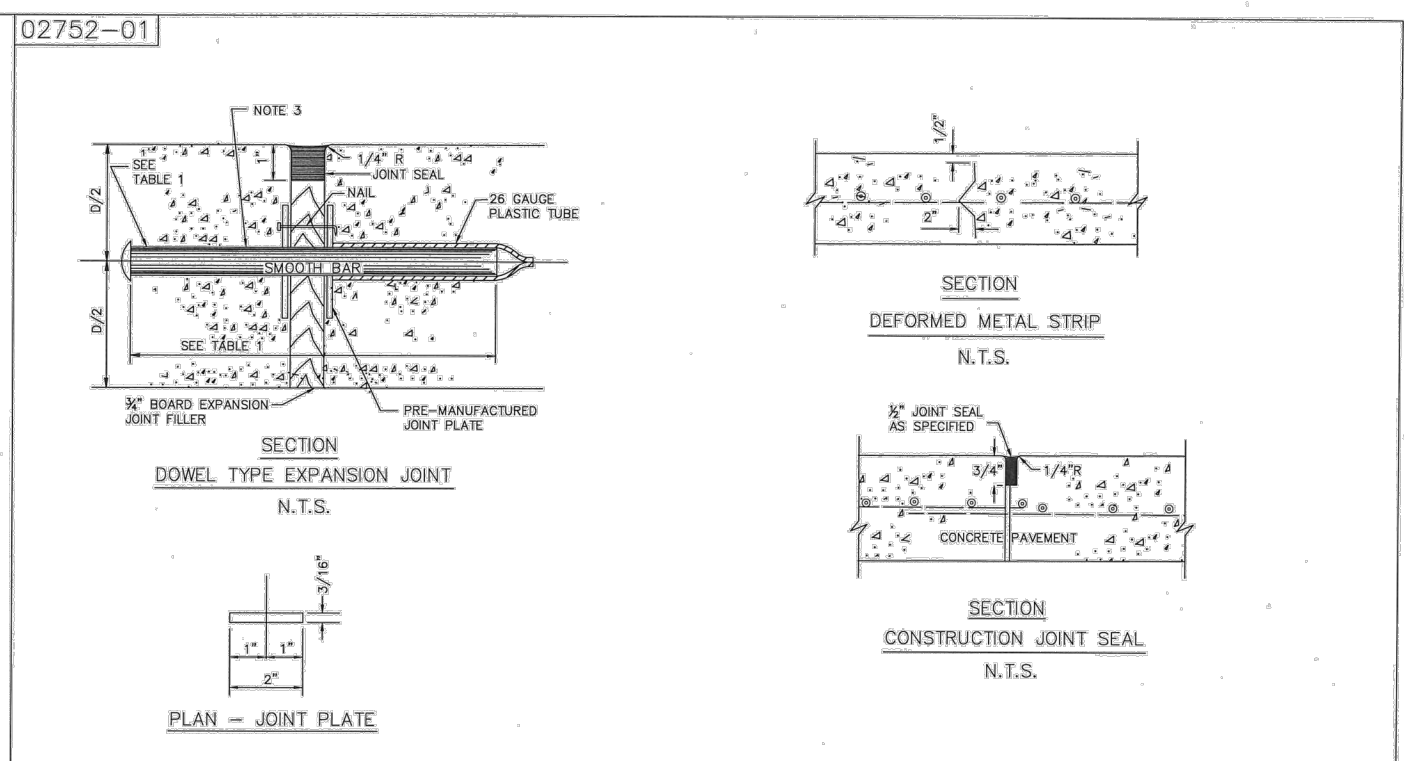
TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

**TABLE 1
 REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH:
 MAXIMUM TRANSVERSE CONTROL JOINT SPACING = 20'-0"
 MAXIMUM EXPANSION JOINT SPACING = 80'-0"
 f'c = 4,000 PSI/28 DAYS AND F'y = 60,000 PSI**

PAVEMENT THICKNESS D (IN)	PAVEMENT WIDTH (FT)	LONGITUDINAL STEEL						TRANSVERSE STEEL					
		# 4 BARS		# 5 BARS		# 6 BARS		# 4 BARS		# 5 BARS		# 6 BARS	
		NUMBER OF BARS	SPACING (IN)	NUMBER OF BARS	SPACING (IN)	NUMBER OF BARS	SPACING (IN)	NUMBER OF BARS	SPACING (IN)	NUMBER OF BARS	SPACING (IN)	NUMBER OF BARS	SPACING (IN)
6	28	17	20.50	4									
7	25	17	18.25	4									
7	35	24	18.00	3									
7	36	25	17.75	3									
7	37	25	18.25	3									
7	41	28	18.00	3									
7	45	31	17.75	3.75									
8	25	20	15.50	2.75	13	24.50	3						
8	34	27	15.50	2.50	17	25.00	4						
8	35	27	16.00	2	18	24.25	4						
8	36	28	15.75	3.25	18	25.00	3						
8	44	24	15.75	4	22	24.75	4						
8	45	35	15.75	2.25	23	24.25	3						
9	25	22	14.00	3	14	22.50	4						
9	34	31	13.50	2	19	22.25	3.50						
9	35	31	13.75	3.75	20	21.75	3.50						
9	36	32	13.75	3	21	21.25	3.50						
9	44	39	13.75	2.75	25	21.75	3						
9	45	39	14.00	4	26	21.25	4.50						
10	25	24	12.75	3.5	17	18.25	4						
10	34	33	12.50	4	21	20.00	4						
10	35	34	12.50	3.75	23	18.75	4						
10	36	35	12.50	3.5	24	18.50	3						
10	44	44	12.00	4	29	18.50	4.50						
10	45	44	12.50	3	29	19.00	3						
11	25	27	11.25	3	17	18.25	4	12	26.75	3	36	36	36
11	34	36	11.50	2.75	24	17.50	2.5	17	25.00	4	24	36	36
11	35	37	11.50	3	24	18.00	3	17	25.75	4	24	36	36
11	36	40	11.00	2	25	17.75	3	17	26.50	4	24	36	36
11	44	48	11.125	2.5	30	18.00	3	21	26.00	4	24	36	36
11	45	49	11.125	3	31	17.75	4	22	25.50	3	24	36	36
12	25				19	18.25	4	13	24.50	3	36	36	36
12	34				26	16.00	4	18	23.50	4	24	36	36
12	35				26	16.50	4	19	23.00	3	24	36	36
12	36				27	16.25	4.5	20	22.25	4.5	24	36	36
12	44				33	16.25	4	24	22.50	5	24	30	36
12	45				35	15.75	3	25	22.25	3	24	30	36

- MINIMUM LAP LENGTH (L):
 A. # 4 BARS : L = 22 INCHES
 B. # 5 BARS : L = 27 INCHES
 C. # 6 BARS : L = 32 INCHES

**CONCRETE PAVEMENT DETAILS
 NTS**



**ELEVATION - JOINT PLATE
 N.T.S.**

- NOTES:**
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED ON 12" CENTRS.
 2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
 3. CENTER DOWEL HORIZONTALLY ON JOINT.
 4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN COVER.
 5. CITY OF HOUSTON APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE.

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

**PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS
 NTS**

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
 02751-01 THROUGH 02752-01

APPROVED BY: *[Signature]* CITY ENGINEER
 APPROVED BY: *[Signature]* DEPUTY DIRECTOR

APPROVED BY: *[Signature]* DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
 FOR CITY OF HOUSTON USE ONLY

CITY OF HOUSTON
 HOUSTON AIRPORT SYSTEM
 Recommended *[Signature]* 06/09/2023
 Houston Airport System
 Director or Designated Representative

REVIEWED AND EXCEPTIONS TAKEN
 The drawings and support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
 Performance and approval of this review does not waive, nor release the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

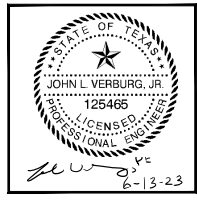
SHEET NO.

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REVISIONS		
NO.	DESCRIPTION	DATE BY

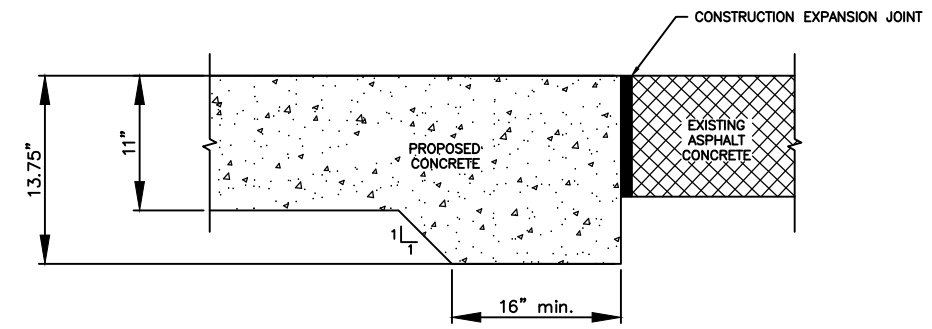
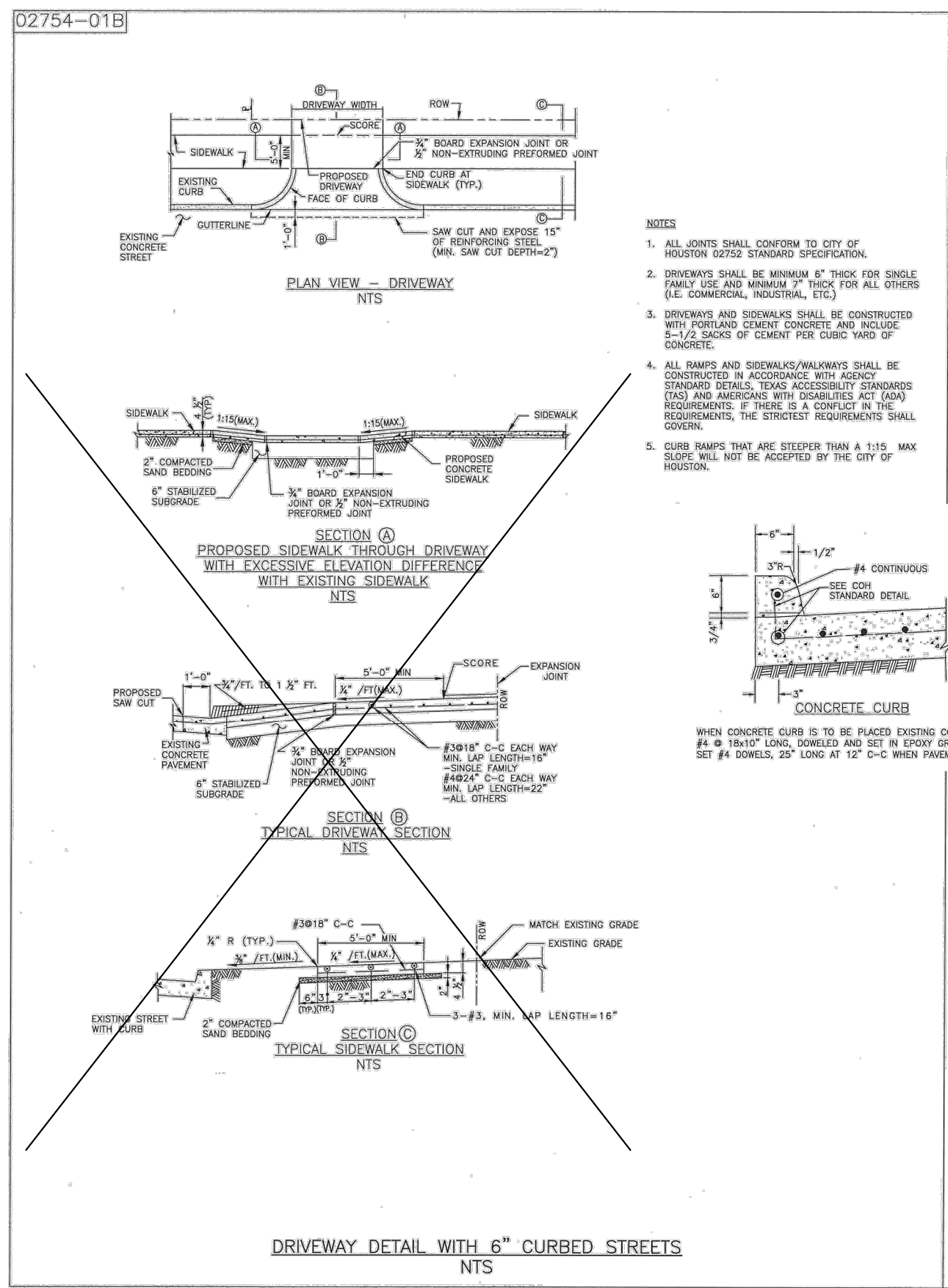
GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 TYPICAL PAVEMENT DETAILS**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



APPROVED BY: _____
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.



1 ISOLATED THICKENED EDGE - PCC TO AC
 CS502 SCALE: NTS

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
 02754-01B THROUGH 02754-02

APPROVED BY: _____
 CITY ENGINEER

APPROVED BY: _____
 DEPUTY DIRECTOR

APPROVED BY: *Carl Haddad*
 DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
 FOR CITY OF HOUSTON USE ONLY

SHEET NO.

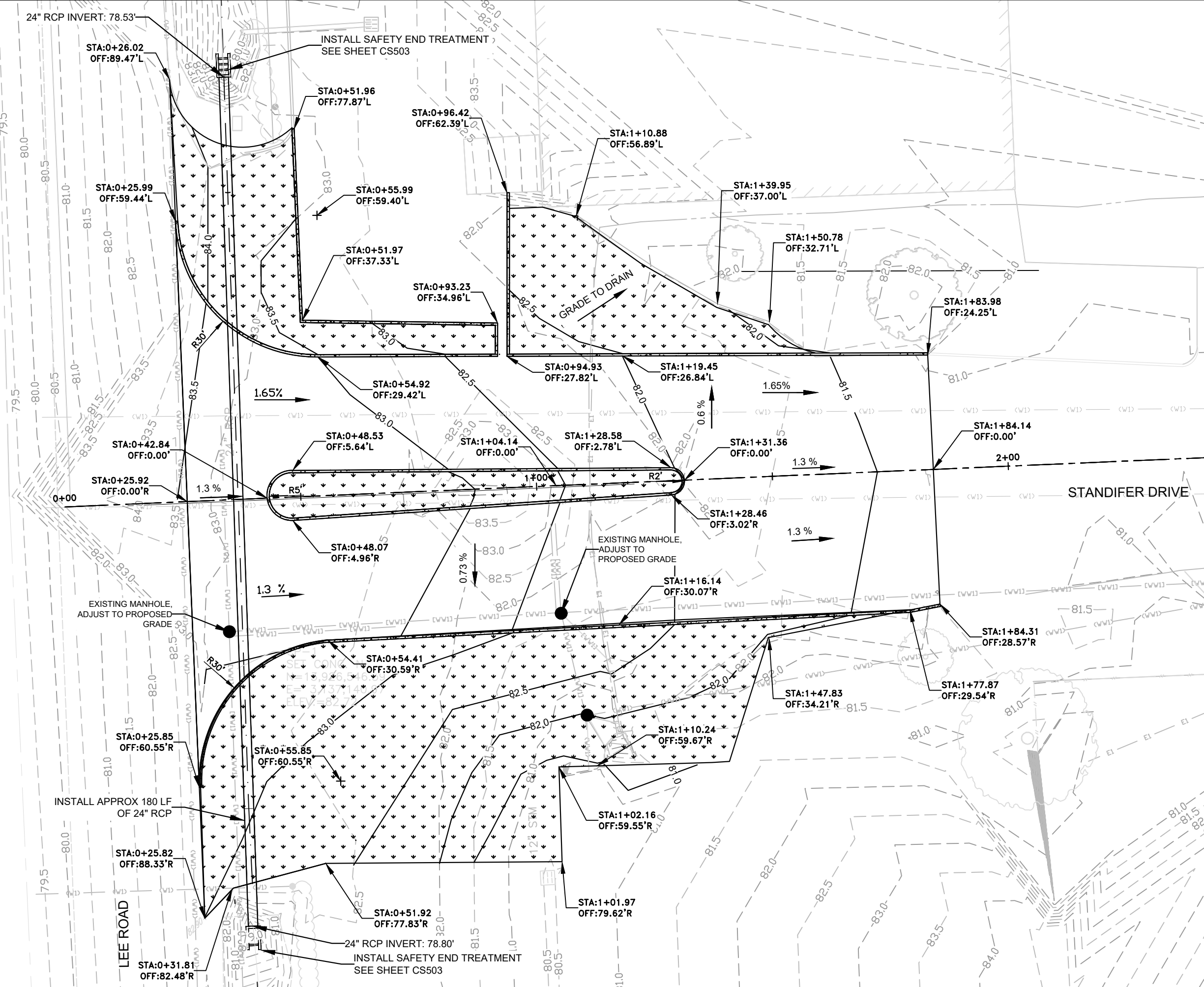
CITY OF HOUSTON
 HOUSTON AIRPORT SYSTEM

Recommended _____ DATE: 06/05/2023
 Houston Airports System
 Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current H.A.S. approved standards.
 Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all authorities having jurisdiction (AHJ).

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LEGEND

- GRASS AREA
- PROPOSED CURB

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
2. ALL COORDINATES SHOWN HEREON HAVE BEEN SCALED UP TO SURFACE VALUES USING A SURFACE TO CONVERT TO GRID COORDINATES USING THE FOLLOWING FORMULA:
SURFACE X 0.999923616683 = GRID (UNIT OF MEASURE = U.S. SURVEY FOOT.)
3. ALL ELEVATIONS ARE REFERENCED TO NAVD 88, NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR VERTICAL CONTROL. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)

HOUSTON AIRPORT SYSTEM
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

ATKINS

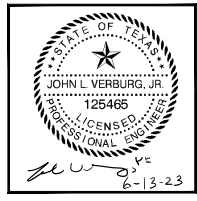
LOCAL OFFICE:
 520 MEMORIAL CITY WAY
 STE. 400
 HOUSTON, TX 77024
 TEL: (713) 576-8500
 ATKINS NORTH
 AMERICA PE FIRM REG.
 #F-000474
 WWW.ATKINSGLOBAL.COM

REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 GRADING AND DRAINAGE LAYOUT**

PROJECT MGR: JLV
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:

DIRECTOR
 HOUSTON AIRPORT SYSTEM

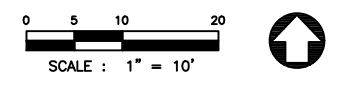
PROJECT NO.
 100066835

A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM

Recommended DATE 06/09/2023
 Houston Airport System Director or Designated Representative

REVIEWED/NO EXCEPTIONS TAKEN
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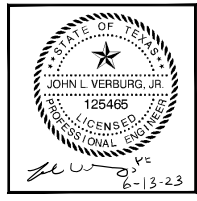
ATKINS
 LOCAL OFFICE:
 520 MEMORIAL CITY WAY
 STE. 400
 HOUSTON, TX 77024
 TEL: (713) 576-8500
 ATKINS NORTH
 AMERICA PE FIRM REG.
 #F-000474
 WWW.ATKINSGLOBAL.COM

REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PRECAST SAFETY END TREATMENT DETAILS**

PROJECT MGR: JLW
DESIGNER: EW
DRAWN BY: MRT
CHECK BY: EW
SCALE:
DATE: 06/12/2023



APPROVED BY:

DIRECTOR
HOUSTON AIRPORT SYSTEM

PROJECT NO.
100066835

A.I.P. NO.

C.I.P. NO.

H.A.S. NO.

SHEET NO.

PIPE I.D.	RCP WALL "B" THICKNESS	TP WALL THICKNESS (7)	"D" (1)	MAXIMUM SLOPE	MINIMUM LENGTH OF UNIT	PIPE RUNNERS REQUIRED		REQUIRED PIPE RUNNER SIZES		
						SINGLE PIPE	MULTIPLE PIPE	NOMINAL DIA.	O.D.	I.D.
12"	2"	1.15"	17"	6:1	4'-9"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
15"	2.25"	1.30"	20.50"	6:1	6'-5"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
18"	2.50"	1.60"	24"	6:1	8'-0"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31"	6:1	11'-3"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
30"	3.50"	2.65"	38.50"	6:1	14'-8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17'-11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4.50"	N/A	52.50"	6:1	21'-2"	Yes	Yes	4" STD	4.500"	4.026"

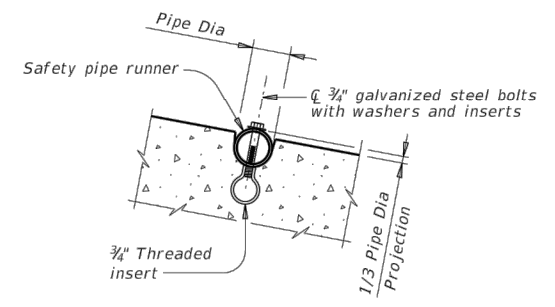
- Dimension "D" is based on Reinforced Concrete Pipe (RCP) meeting the requirements of ASTM C-76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For Thermoplastic Pipe (TP) take into account the annular space requirements for grouted connections.
- Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.
- Toewall to be used only when dimension is shown elsewhere in the plans.
- Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item "Safety End Treatment".
- Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.
- Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:
 Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment".
 When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.
 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.
 Manufacture this product in accordance with Item "Safety End Treatment" except as noted below:
 A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WWR).
 B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).
 At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.
 Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.
 Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.
 Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.
 Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464 "Reinforced Concrete Pipe". Connect TP by grouting. See PBGC standard for grouted connections with TP and precast safety end treatment.

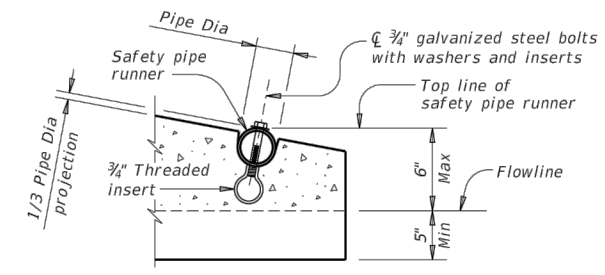
Texas Department of Transportation Bridge Division Standard

PRECAST SAFETY END TREATMENT
TYPE II ~ PARALLEL DRAINAGE
PSET-SP

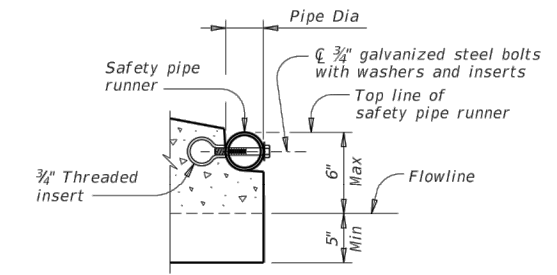
FILE: psetspss-18.dgn DN: RLW CK: KLR DW: JTR CK: GAF
 ©TxDOT February 2010 CONT SECT JOB HIGHWAY
 REVISIONS
 11-10: Add note for synthetic fibers. DIST COUNTY SHEET NO.
 09-18: Added Thermoplastic Pipe in table.



INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS
 (If required)

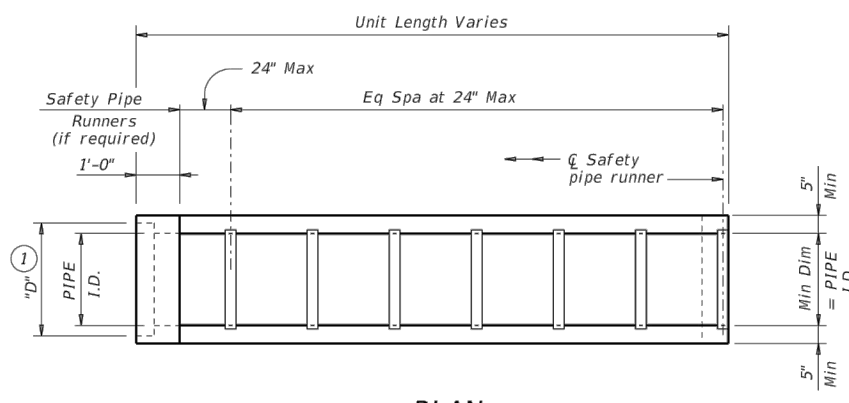


OPTION A

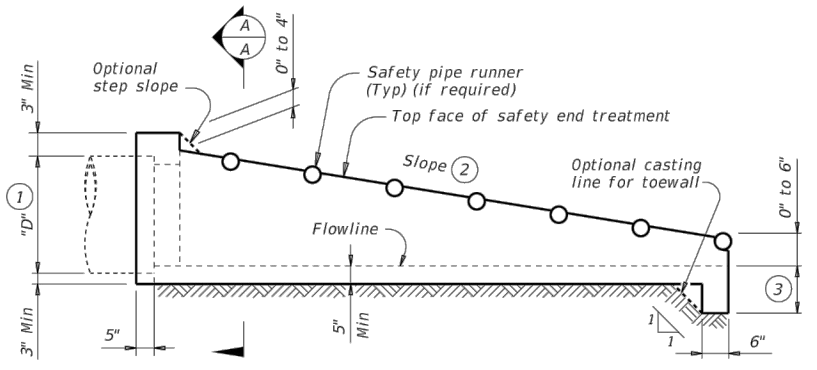


OPTION B

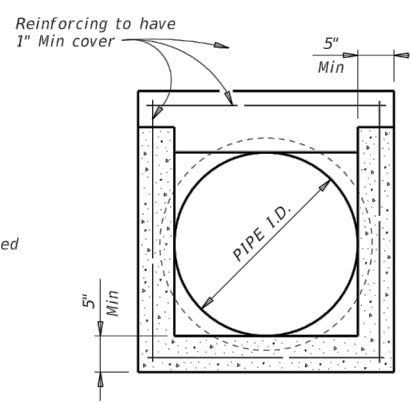
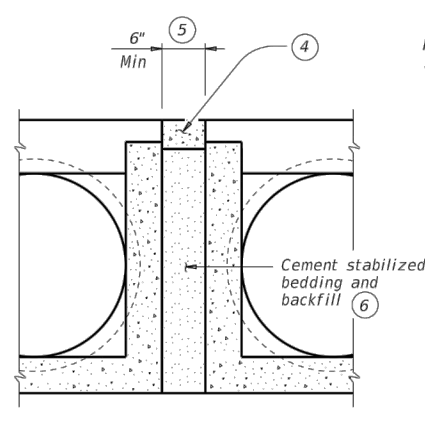
END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS
 (If required)



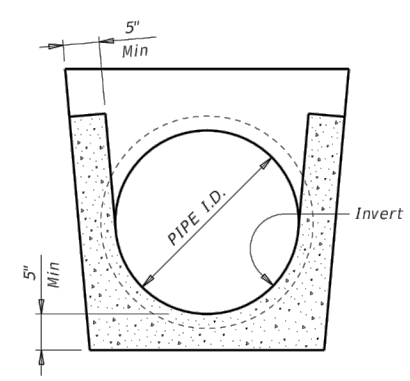
PLAN
 (Showing bell end connection)



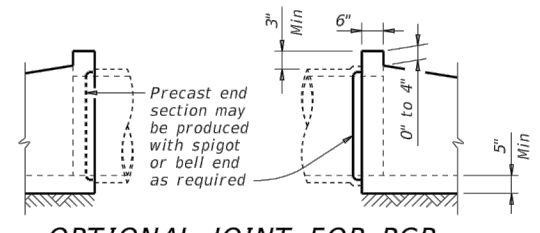
LONGITUDINAL ELEVATION
 (Showing bell end connection)



OPTION WITH SQUARE BOTTOM
SECTION A-A



OPTION WITH INVERT BOTTOM



OPTIONAL JOINT FOR RCP
 (Showing joint between RCP and precast safety end treatment)

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:

REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 BEDDING AND BACKFILL DETAILS**

PROJECT MGR: JLW
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:

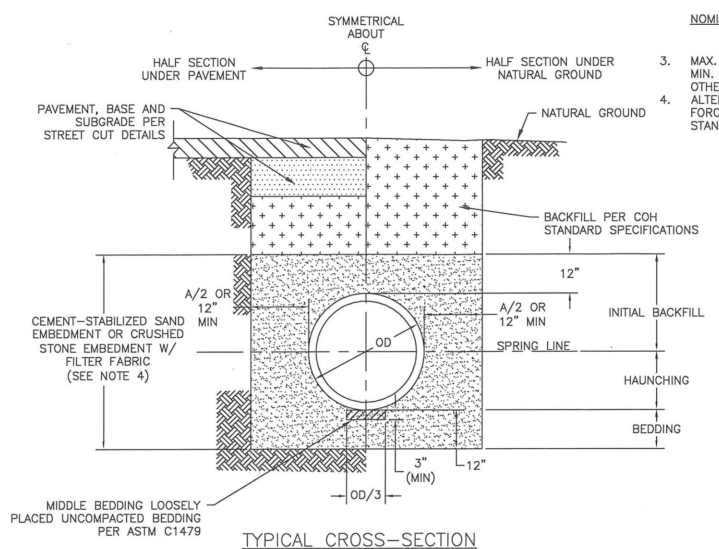
DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
 100066835

A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

02317-03

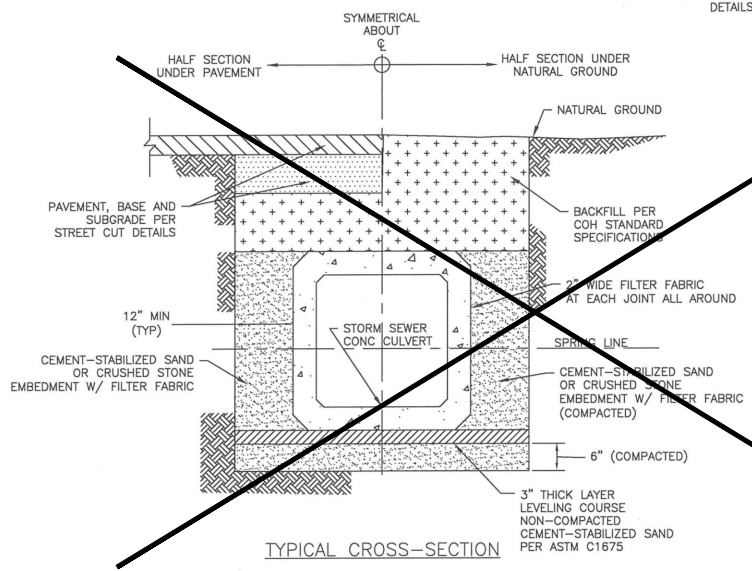
- NOTES:**
- THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
 - MIN. TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:
- | NOMINAL PIPE SIZE | "A" |
|-------------------|-----|
| 18" TO 30" | 24" |
| OVER 30" | 36" |
- MAX. TRENCH WIDTH SHALL BE NOT GREATER THAN MIN. TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
 - ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.



**TYPICAL CROSS-SECTION
 SANITARY OR STORM SEWER BEDDING AND BACKFILL
 FOR DRY STABLE TRENCH
 NTS**

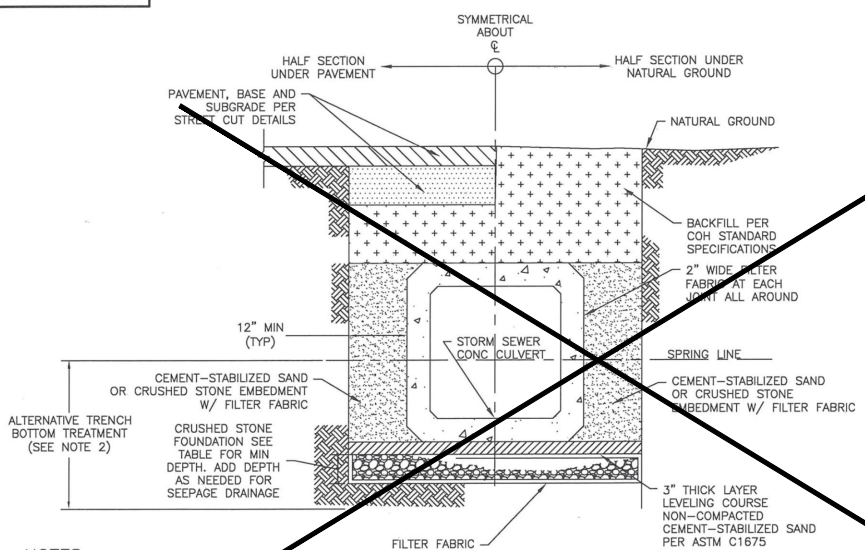
02317-05

- NOTES:**
- WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
 - SUBGRADE AND PAVEMENT FOR STREET CUT DETAILS - 02951.



**TYPICAL CROSS-SECTION
 PRECAST CONCRETE BOX STORM SEWER
 BEDDING AND BACKFILL FOR DRY STABLE TRENCH
 NTS**

02317-06



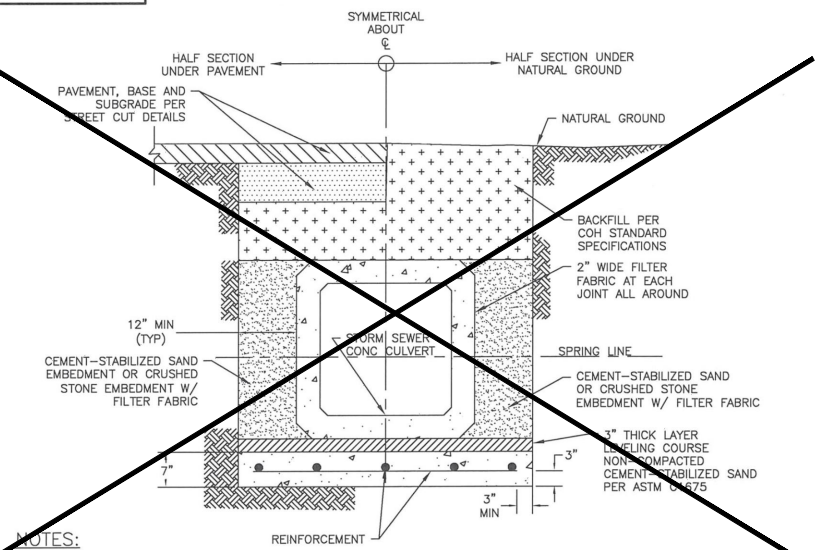
**TYPICAL CROSS-SECTION
 PRECAST CONCRETE BOX STORM SEWER
 BEDDING AND BACKFILL FOR WET STABLE TRENCH
 NTS**

- NOTES:**
- WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
 - ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY OF ENGINEERS AND AS PAID FOR IN THE PROPOSAL.

TABLE

CULVERT SIZE (FT)	FOUNDATION DEPTH (INCHES)
3' X 2' TO 6' X 6'	12
6' X 6' AND LARGER	18

02317-07



**TYPICAL CROSS-SECTION
 PRECAST CONCRETE BOX STORM SEWER
 BEDDING AND BACKFILL WITH SEAL SLAB
 NTS**

- NOTES:**
- WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
 - REINFORCED CONCRETE SLAB PIPE BEDDING TO BE PLACED IN DRY TRENCH ONLY.
 - CONCRETE IN SLAB TO REACH MIN COMPRESSIVE STRENGTH OF 1000 PSI BASED ON MAX DESIGN BEFORE PIPE IS LAID.
 - PRECAST SEAL SLAB MAYBE USED AS APPROVED BY CITY ENGINEER.

FIRM INFORMATION ENGINEER'S SEAL

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

STORM SEWER
 02317-03 THROUGH 07

APPROVED BY: *[Signature]* APPROVED BY: *[Signature]*
 CITY ENGINEER DEPUTY DIRECTOR

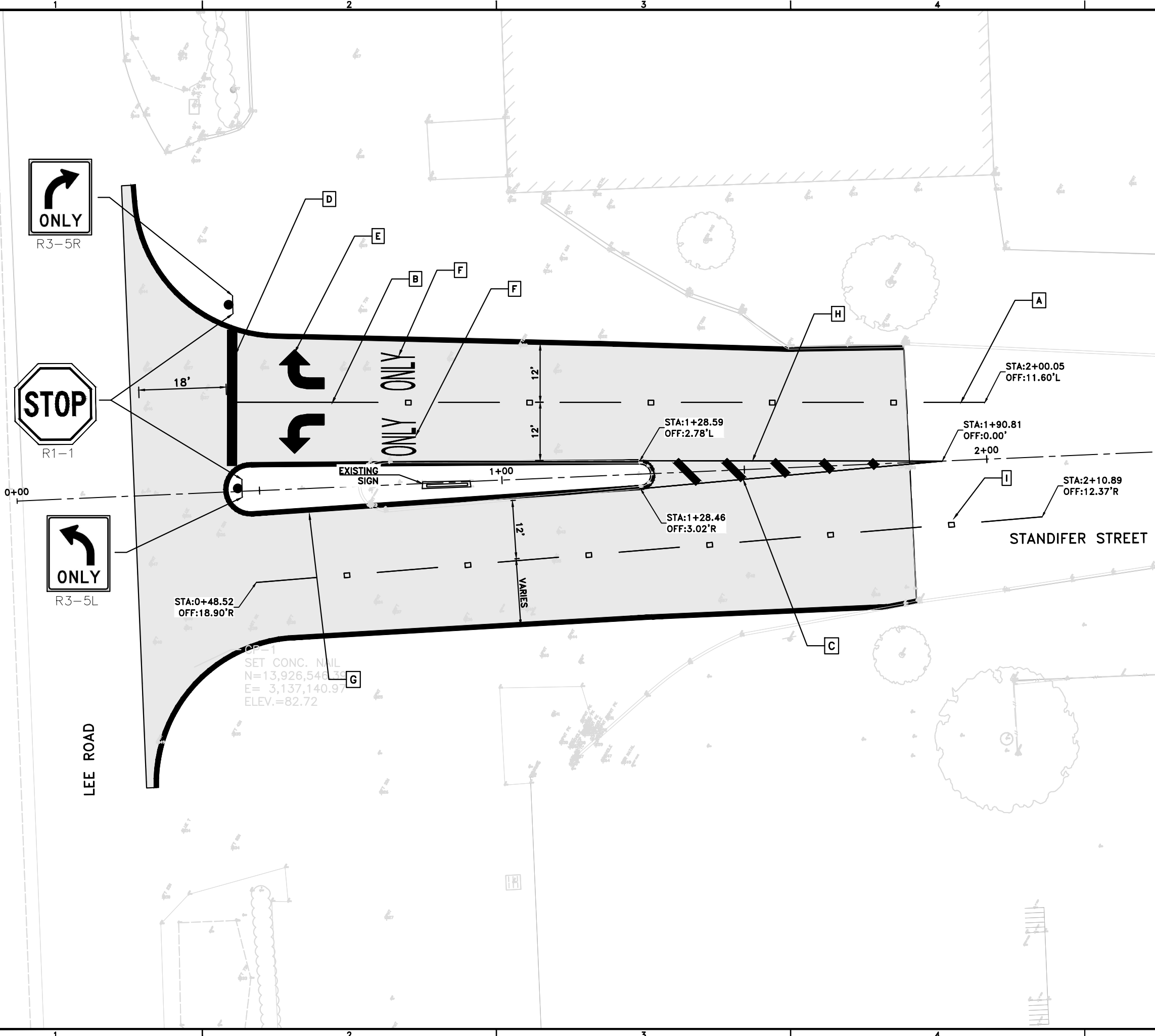
APPROVED BY: *[Signature]*
 DIRECTOR

EFFECTIVE DATE: JUL-01-2019
 FOR CITY OF HOUSTON USE ONLY


SHEET NO.

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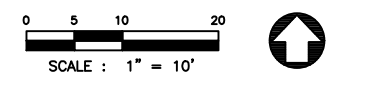


LEGEND

-  PROP PAVEMENT
- A** REFL PAV MRK TY I (W) (4") (BRK)
- B** REFL PAV MRK TY I (W) (8") (SLD)
- C** REFL PAV MRK STRIPES @ 45° (Y) (24") (SLD)
- D** REFL PAV MRK TY I (W) (24") (SLD)
- E** REFL PAV MRK TY I (W) (ARROW)
- F** REFL PAV MRK TY I (W) (WORD)
- G** MEDIAN CURB PAINT (Y)
- H** REFL PAV MRK (Y) (SLD) (4") (8" C-C)
- I** REFL RAIS PAV MRK (W) (4") TY II C-R @ 40'

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTREA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
2. ALL COORDINATES SHOWN HEREON HAVE BEEN SCALED UP TO SURFACE VALUES USING A SURFACE TO CONVERT TO GRID COORDINATES US THE FOLLOWING FORMULA:
SURFACE X 0.999923616683 = GRID (UNIT OF MEASURE = U.S. SURVEY FOOT.)
3. ALL ELEVATIONS ARE REFERENCED TO NAVD 88, NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR VERTICAL CONTROL. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)



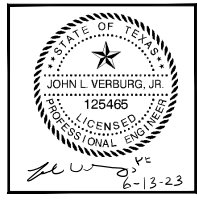
ATKINS
 LOCAL OFFICE:
 520 MEMORIAL CITY WAY
 STE. 400
 HOUSTON, TX 77024
 TEL: (713) 576-8500
 ATKINS NORTH
 AMERICA PE FIRM REG.
 #F-000474
 WWW.ATKINSGLOBAL.COM

REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PAVEMENT STRIPING LAYOUT**

PROJECT MGR: JLJ
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023



APPROVED BY:

 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
 100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

CM101

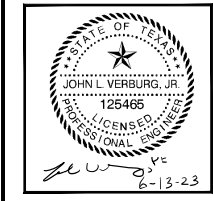
ATKINS
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REVISIONS

NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PAVEMENT MARKING / GENERAL**
NOTES AND LEGENDS

PROJECT MGR: JLW
 DESIGNER: EW
 DRAWN BY: MRT
 CHECK BY: EW
 SCALE:
 DATE: 06/12/2023

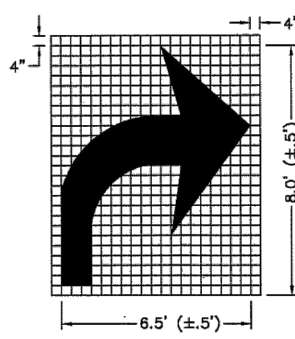
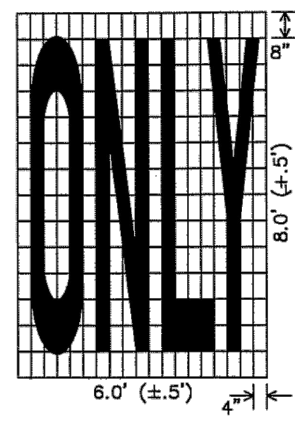


APPROVED BY:
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO. 100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

GENERAL PAVEMENT MARKING NOTES:

- PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT'S COMPLETION.
- ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
- THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
- THE DESIGN SPEED FOR THE ROAD IS: _____. THE POSTED SPEED LIMIT IS: _____.
- ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS, AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
- THE FINAL LONGITUDINAL STRIPINGS SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
- ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY CITY OF HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
- ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
- ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO CITY OF HOUSTON STANDARD SPECIFICATION 02762. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
- THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKING PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
- BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
- FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
- FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRANSPORTATION & DRAINAGE OPERATION REPRESENTATIVE (713-803-3054).

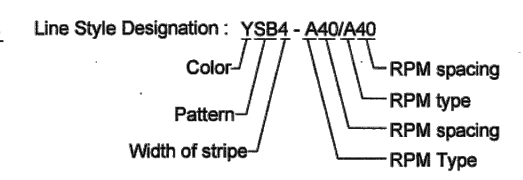


Description and Application of Pavement Marking Lines

Line Series	Color	Description	Width Inches	Typical Applications
WB	White	Broken (10' stripe w/ 30' gap)	4"	- Lane lines between travel lanes in the same direction where changing of lanes is permitted.
WS	White	Solid	4"	- Edge lines to delineate the right edge of the roadway.
			6"	- Left edge of bicycle lane and lane lines between travel lanes in the same direction where changing of lanes is discouraged.
			12"	- Perpendicular crosswalk lines.
			24"	- Stop bars at intersections (signalized and unsignalized). - Hatching at high visibility crosswalks.
WG	White	Guide (2' stripe w/6' gap)	6"	- Diagonal hatching used in gores between same direction of travel lanes.
			12", 24"	- Guide lines through intersections. - Taper lines for turn lanes. - Guide lines for bicycle lanes.
YS	Yellow	Solid	4"	- Edge lines to delineate the left edge of a divided roadway, a one-way road, or ramp.
			12", 24"	- Diagonal hatching used in gores between opposing direction of travel lanes.
YDS	Yellow	Double Solid	4" - (4") - 4" (gap)	- Centerline that separates opposing travel lanes and delineation of median islands.
YDB	Yellow	Double Broken	4" - (4") - 4" (gap)	- Defines the edges of center reversible lanes that are used as TWLTLs during intermittent periods.
YB	Yellow	Broken (10' stripe w/ 30' gap)	4"	- Separates travel lanes in opposite directions where passing is permitted in both directions of travel.
YB (BIKE)	Yellow	Broken (3' stripe w/ 9' gap)	4"	- Separates bicycle travel lanes in opposite directions where passing is permitted in both directions of travel.
YSB	Yellow	Solid & Broken Broken (10' stripe w/ 30' gap)	4" - (4") - 4" (gap)	- Separates travel lanes in opposite directions where passing is permitted in one direction and prohibited in the opposite direction. - Used for edge of two-way left-turn lanes (TWLTL).
BICYCLE GREEN	Green	Solid Colored Pavement	Varies	- Ped/Bike crossing - Vehicle / Bike/ Conflict Area
YIELD LINE	White	Triangle	16" x 24"	- Mid-Block crossing.

Description and Application of Reflective Raised Pavement Markers (RPM)

RRPM Types	Color	COH Spec. Sec. 02764 Equivalent	Description
C	Clear	Type I-C	- Approach face that reflects white light, and the other side does not reflect.
R	Clear & Red	Type II-C-R	- Approach face that reflects white light, and the other side reflects red light.
A	Amber & Amber	Type II-A-A	- Approach face and the other side both reflect amber light.



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GENERAL NOTES
AND LEGENDS
(NOT TO SCALE)

 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01510-01

REVISIONS		
NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 PAVEMENT MARKING DETAILS**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023

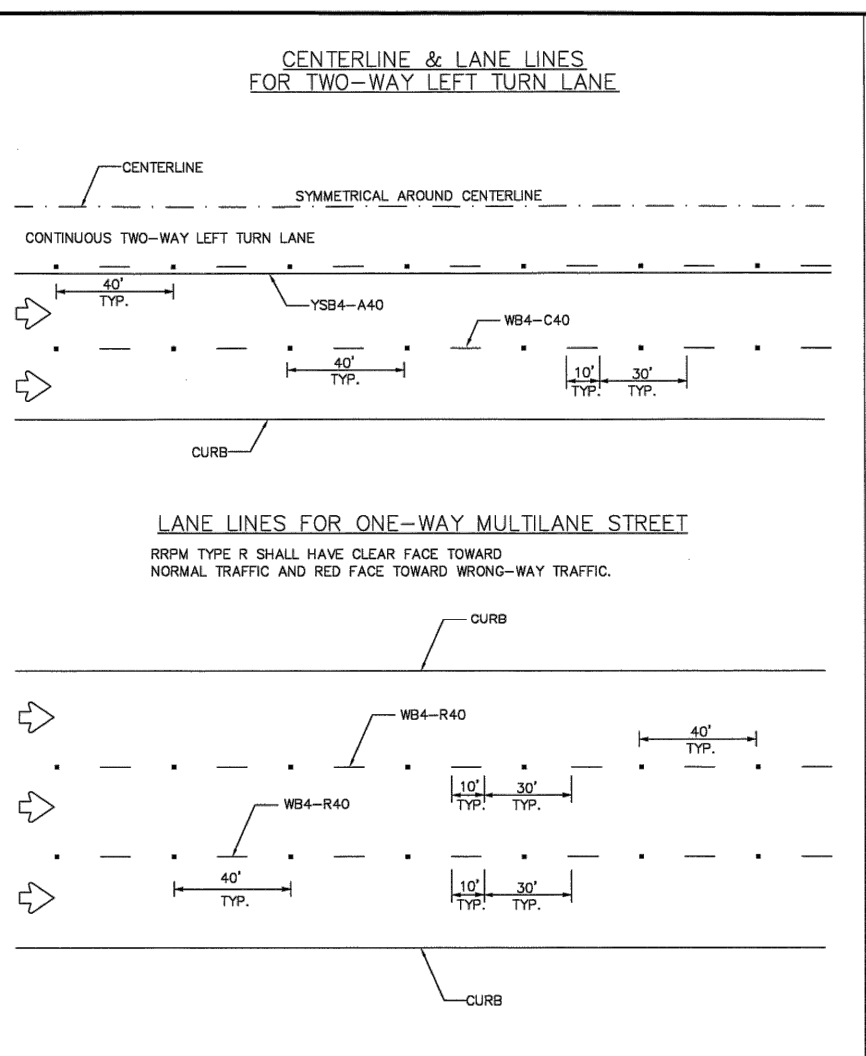
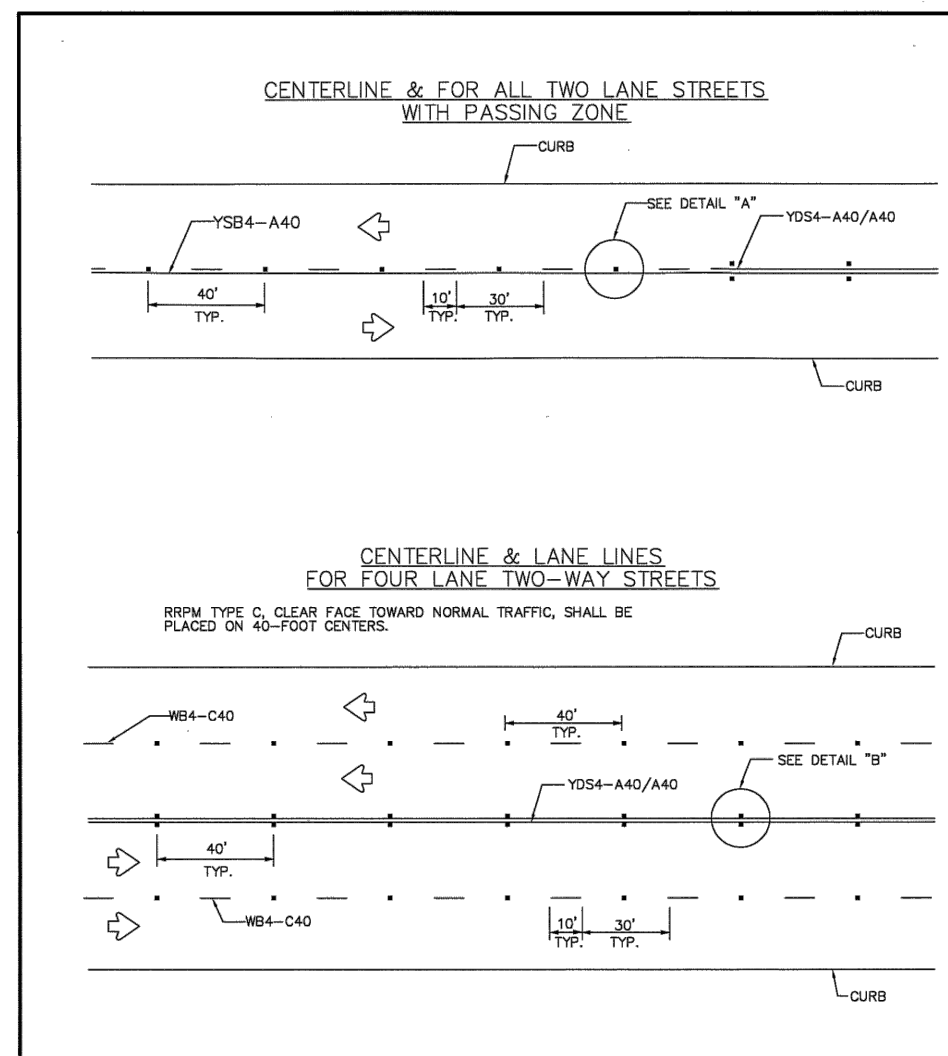


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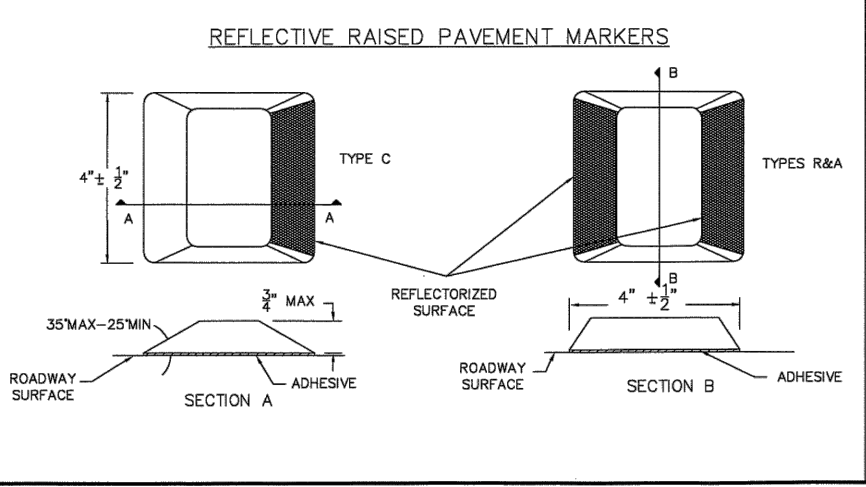
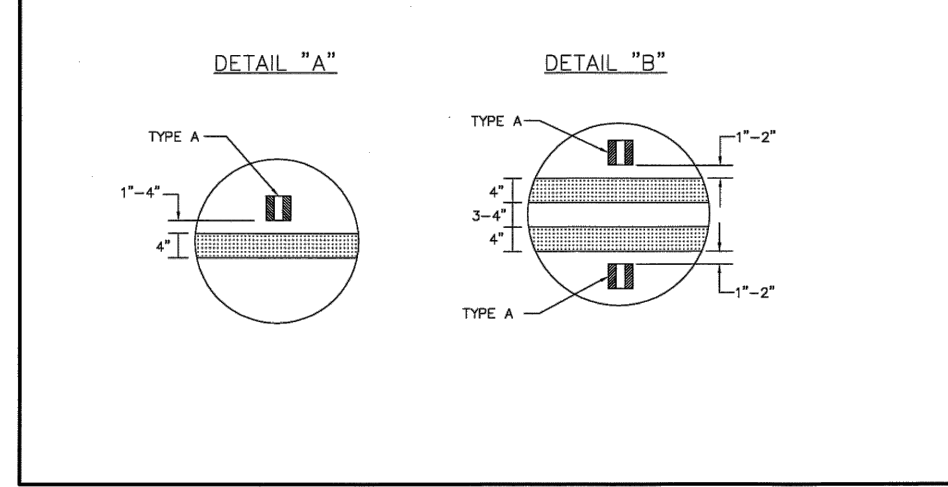
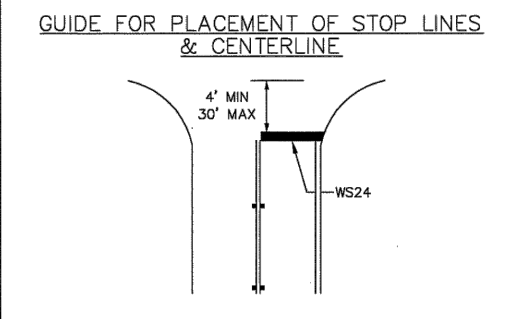
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	

CM502



- GENERAL NOTES:
1. EDGELINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
 2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
 3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
 4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
 5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.



CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE (NOT TO SCALE)

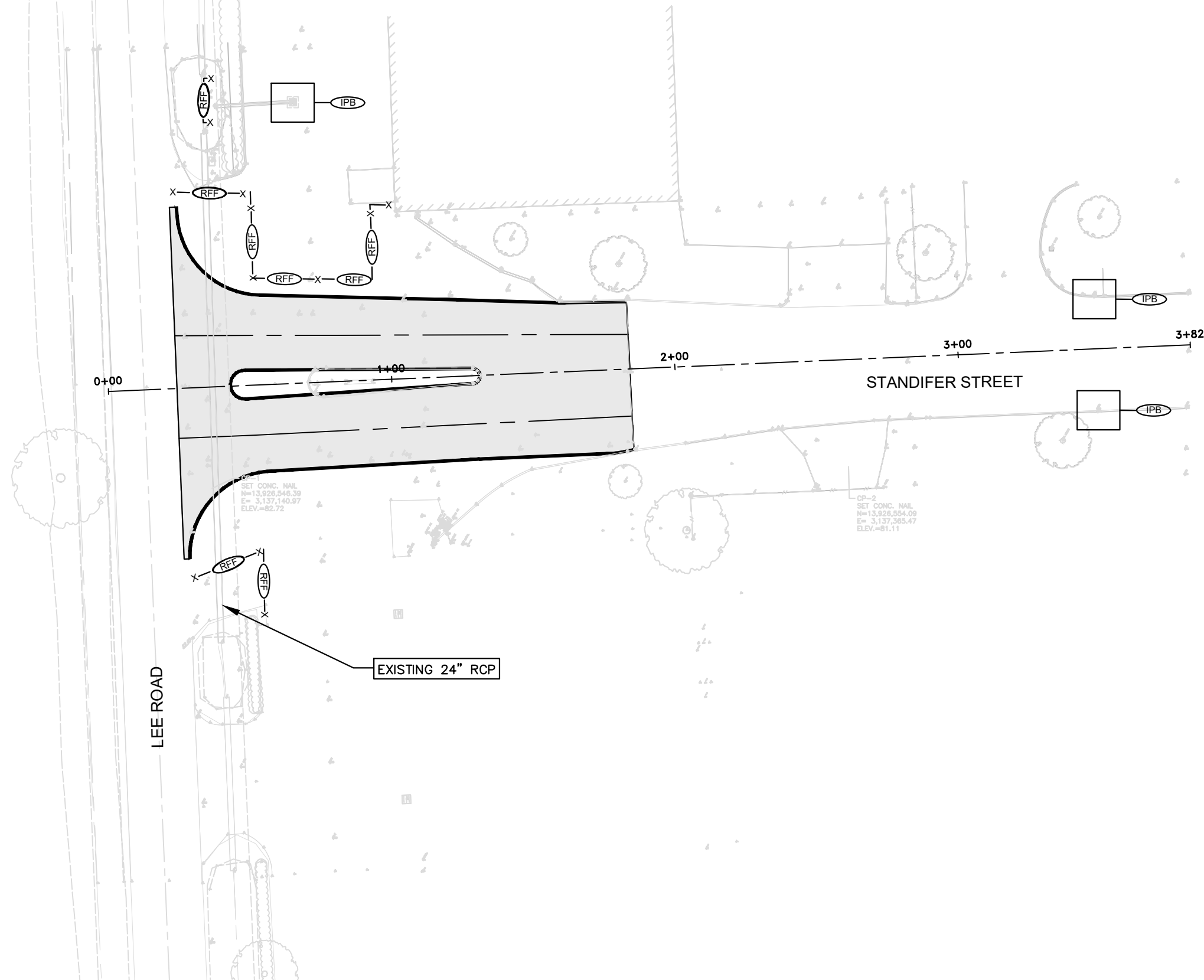
 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01510-05

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM
 Recommended
 Houston Airports System
 Director or Designated Representative
 08/03/2023
 DATE

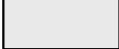
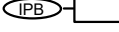

REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAST approved standards.
 Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).

C:\pwwork\atkins\01\work\atkins_les14438\dms76218\01B_CM502_PVMT_MRK-REELC-RAISED-POSTION_GUIDANCE.dwg Jun 13, 2023 - 1:29pm

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LEGEND

-  **PROP PAVEMENT**
-  **INLET PROTECTION BARRIER FENCE, SEE DETAILS ON SHEET CE501**
-  **REINFORCED FILTER FABRIC FENCE, SEE DETAILS ON SHEET CE501**

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTREA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
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HOUSTON AIRPORT SYSTEM
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

ATKINS

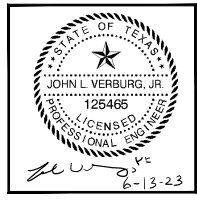
LOCAL OFFICE:
 520 MEMORIAL CITY WAY
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REVISIONS

NO.	DESCRIPTION	DATE BY


**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 SWPP LAYOUT**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023

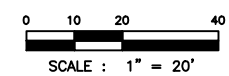


APPROVED BY: _____
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM

Recommended:  DATE: 08/03/2023
 Houston Airports System Director or Designated Representative

REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
 Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all authoritative Having Jurisdiction (AHJ).



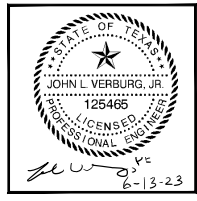
PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	CE101

ATKINS
 LOCAL OFFICE:
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REVISIONS		
NO.	DESCRIPTION	DATE BY

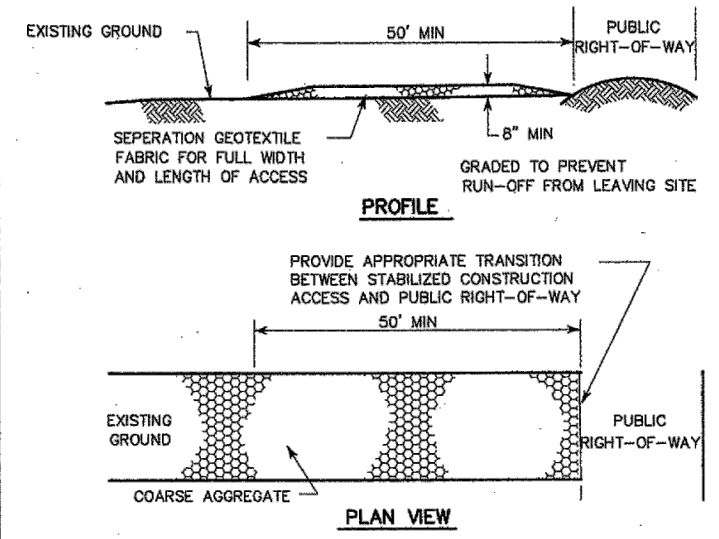
**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 SWPP DETAILS**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



APPROVED BY:	
DIRECTOR	HOUSTON AIRPORT SYSTEM
PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	

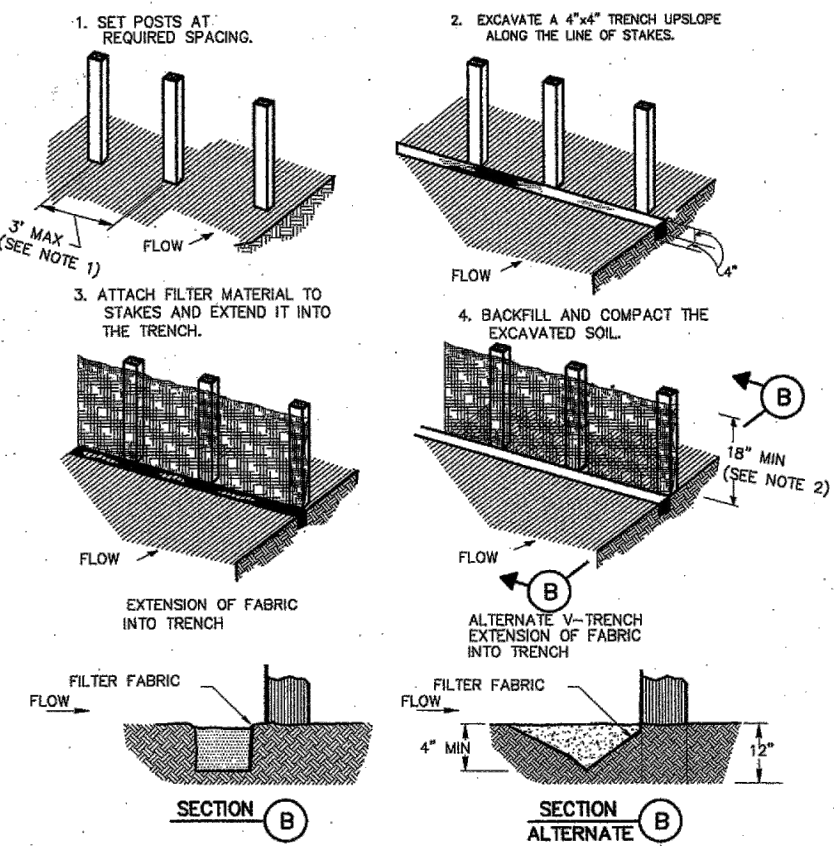
CE501



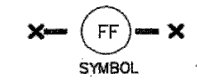
- CONSTRUCTION NOTES:**
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
 2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
 3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
 4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
 5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
 6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
 7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.



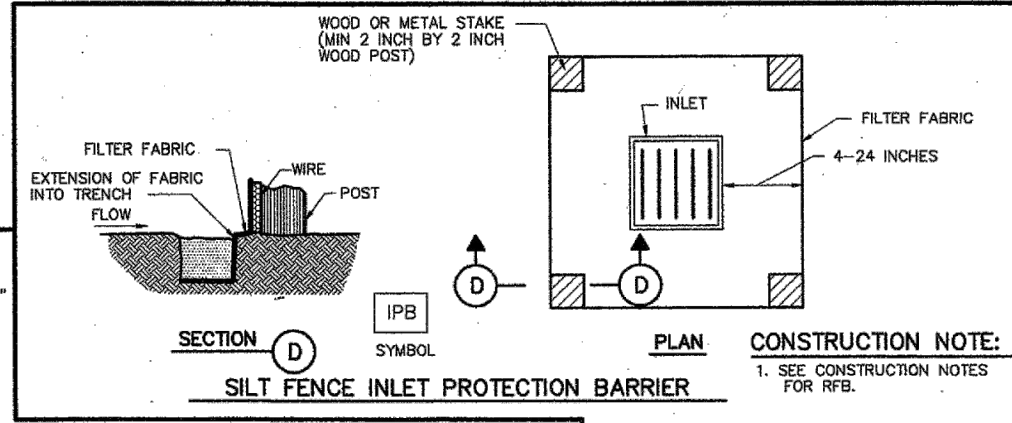
STABILIZED CONSTRUCTION ACCESS



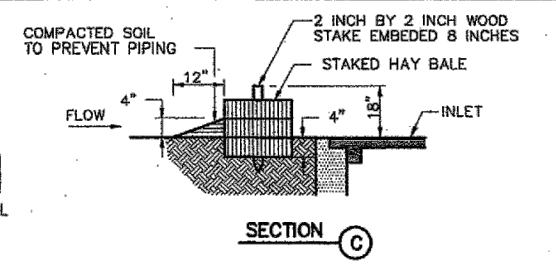
- CONSTRUCTION NOTES:**
1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
 2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
 4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.



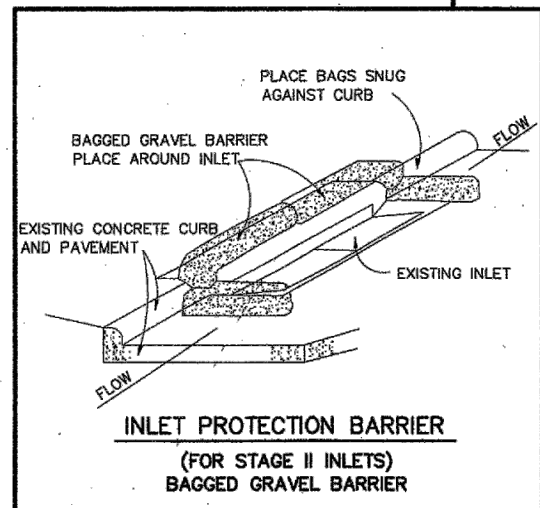
FILTER FABRIC BARRIER



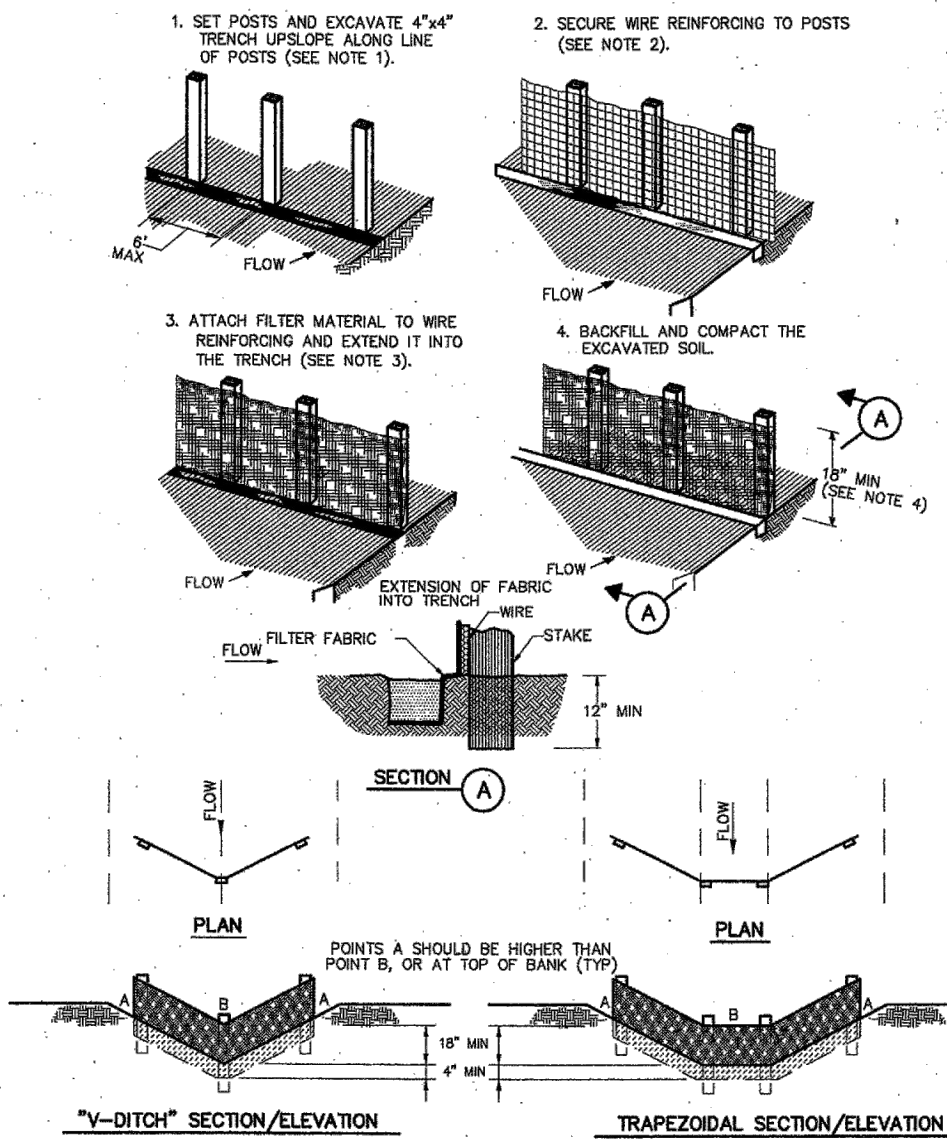
SILT FENCE INLET PROTECTION BARRIER



HAY BALE INLET PROTECTION BARRIER

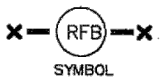


**INLET PROTECTION BARRIER
 (FOR STAGE II INLETS)
 BAGGED GRAVEL BARRIER**



CONSTRUCTION NOTES:

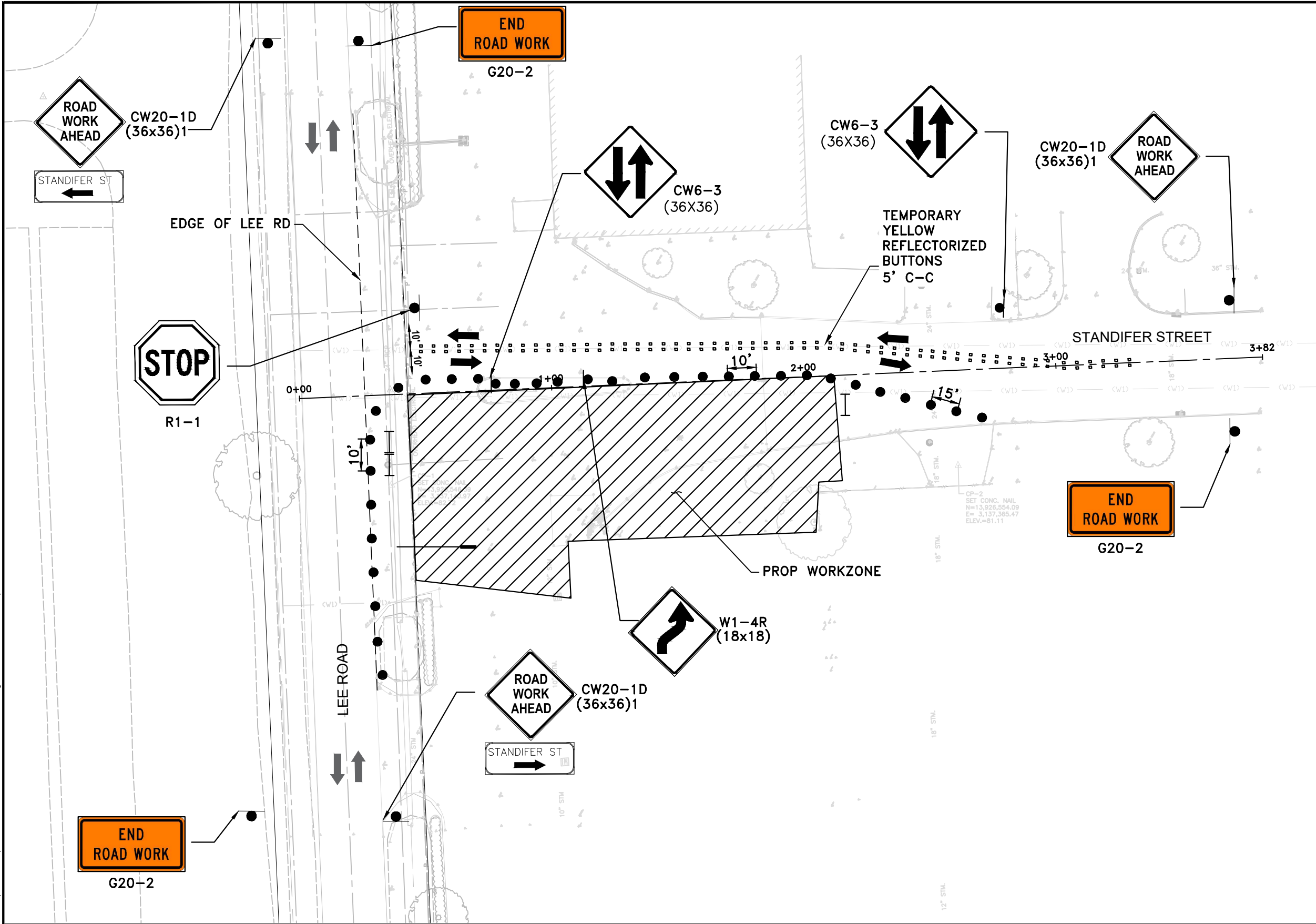
1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.






REINFORCED FILTER FABRIC BARRIER

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LEGEND

-  PROP WORKZONE
-  BARRICADE
-  DRUMS

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTREA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
2. ALL COORDINATES SHOWN HEREON HAVE BEEN SCALED UP TO SURFACE VALUES USING A SURFACE TO CONVERT TO GRID COORDINATES US THE FOLLOWING FORMULA: SURFACE X 0.999923616683 = GRID (UNIT OF MEASURE = U.S. SURVEY FOOT.)
3. ALL ELEVATIONS ARE REFERENCED TO NAVD 88, NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR VERTICAL CONTROL. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)

HOUSTON AIRPORT SYSTEM
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

ATKINS
 LOCAL OFFICE:
 920 MEMORIAL CITY WAY
 STE. 400
 HOUSTON, TX 77024
 TEL: (713) 576-8500
 ATKINS NORTH
 AMERICA PE FIRM REG.
 #F-000474
 WWW.ATKINSGLOBAL.COM

REVISIONS

NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 TRAFFIC CONTROL LAYOUT (PHASE 1)**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023




APPROVED BY:

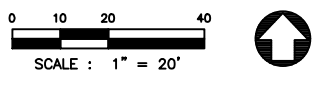
 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
 100066835
 A.I.P. NO.
 C.I.P. NO.
 H.A.S. NO.
 SHEET NO.

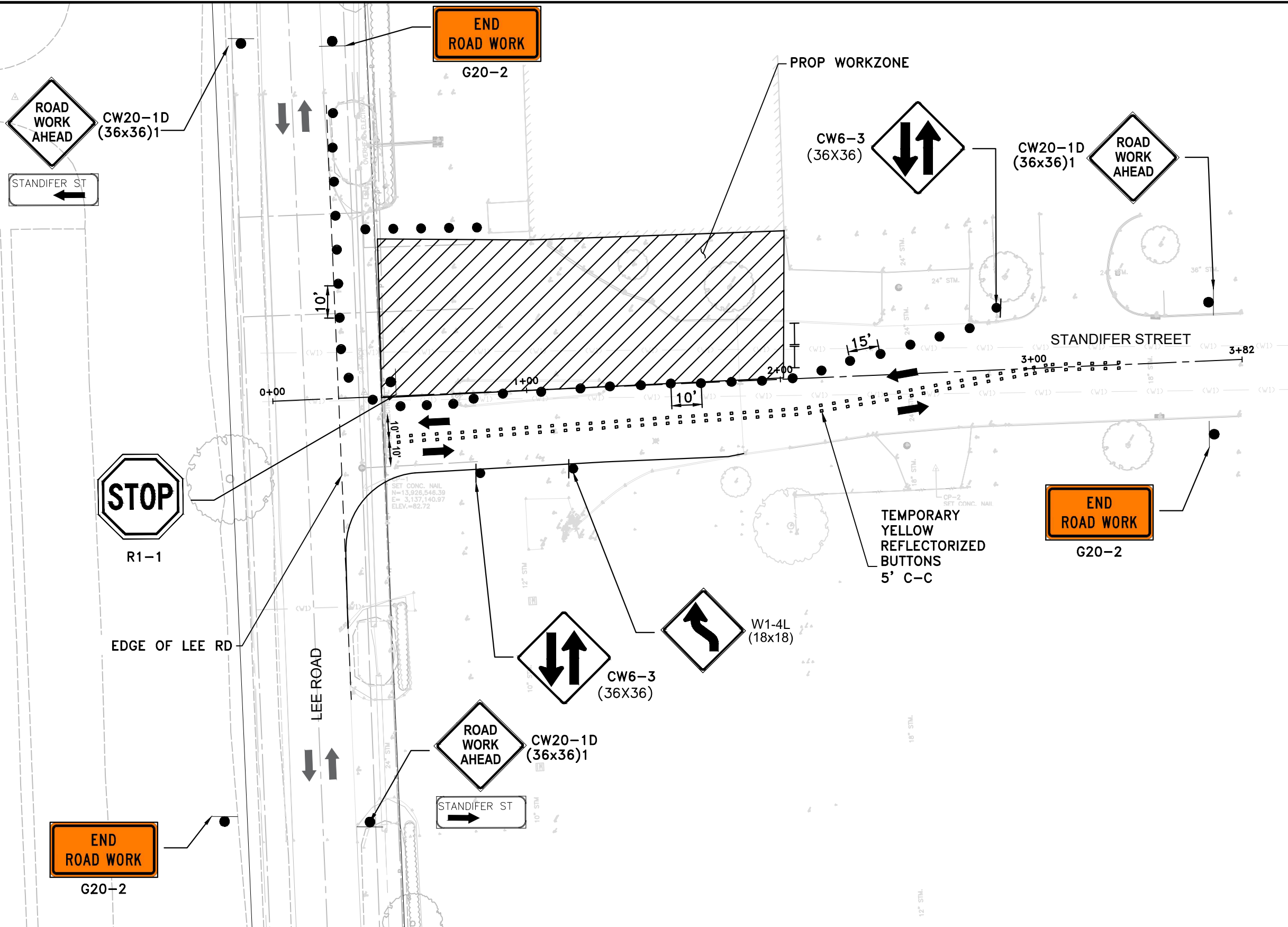
CITY OF HOUSTON
 HOUSTON AIRPORTS SYSTEM

Recommended:  DATE: 06/03/2023
 Houston Airport System
 Director or Designated Representative




REVIEWED / NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current HAS approved standards.
 Performance and approval of this review does not waive, nor relieve the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all authorities having jurisdiction (AHJ).



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LEGEND

-  PROP WORKZONE
-  BARRICADE
-  DRUMS

SURVEY NOTES

1. ALL COORDINATES ARE REFERENCE TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTREA ZONE NAD 83 (2011), EPOCH 2010.00 NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR HORIZONTAL CONTROL. NGS GRID COORDINATES: N=13,912,033.65 E=3,129,527.22
2. ALL COORDINATES SHOWN HEREON HAVE BEEN SCALED UP TO SURFACE VALUES USING A SURFACE TO CONVERT TO GRID COORDINATES US THE FOLLOWING FORMULA: SURFACE X 0.999923616683 = GRID (UNIT OF MEASURE = U.S. SURVEY FOOT.)
3. ALL ELEVATIONS ARE REFERENCED TO NAVD 88, NGS MONUMENT "ZHU B", PRIMARY AIRPORT CONTROL STATION WAS HELD FOR VERTICAL CONTROL. ELEVATION = 81.03, NAVD88 (AS ADJUSTED IN JULY 2002 PER NGS PUBLISHED DATASHEET)

HOUSTON AIRPORT SYSTEM
 GEORGE BUSH INTERCONTINENTAL AIRPORT / HOUSTON, TX

ATKINS

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 ATKINS NORTH
 AMERICA PE FIRM REG.
 #F-000474
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REVISIONS

NO.	DESCRIPTION	DATE BY

GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
**STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 TRAFFIC CONTROL LAYOUT PHASE 2**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



APPROVED BY:

 DIRECTOR
 HOUSTON AIRPORT SYSTEM

PROJECT NO.
 100066835


A.I.P. NO.

C.I.P. NO.

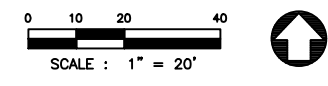
H.A.S. NO.

SHEET NO.

CITY OF HOUSTON
 HOUSTON AIRPORT SYSTEM

Recommended:  DATE: 08/03/2023
 Houston Airports System Director or Designated Representative

REVIEWED - NO EXCEPTIONS TAKEN
 The drawings & support documents submitted for permit review meet the design intent, and to the best of our knowledge, appear to be in compliance with current H&A approved standards.
 Performance and approval of this review does not waive, nor release the applicant from full responsibility & liability to conform and comply with all applicable standards, codes, and regulations required from all Authorities Having Jurisdiction (AHJ).



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REVISIONS		
NO.	DESCRIPTION	DATE BY

**GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)
 STANDIFER STREET AND LEE ROAD
 SINKHOLE REPAIR AND ENTRANCE REPAVING
 TRAFFIC CONTROL DETAILS**

PROJECT MGR:	JLV
DESIGNER:	EW
DRAWN BY:	MRT
CHECK BY:	EW
SCALE:	
DATE:	06/12/2023



APPROVED BY:	
DIRECTOR	HOUSTON AIRPORT SYSTEM
PROJECT NO.	100066835
A.I.P. NO.	
C.I.P. NO.	
H.A.S. NO.	
SHEET NO.	

BARRICADE NOTES

THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND ITS REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.

CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.

BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.

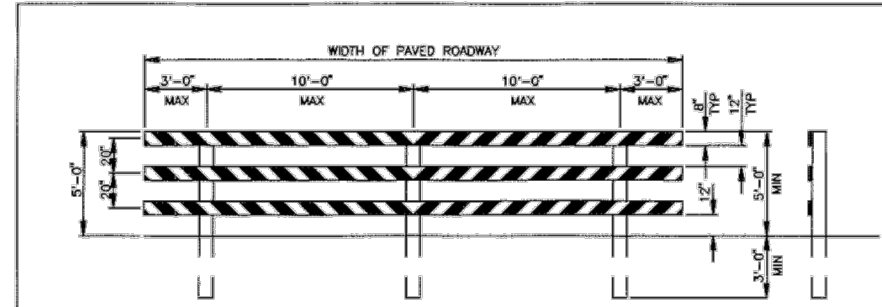
BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL IN A MANNER APPROVED BY THE DEPARTMENT OF TRAFFIC AND TRANSPORTATION. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.

BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.

THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOT.

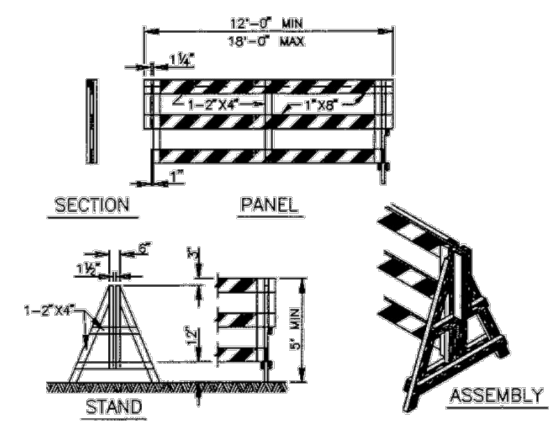
THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.

BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.

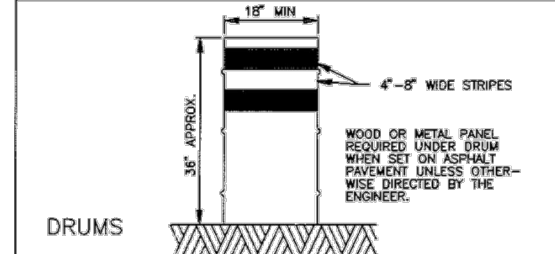


TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC



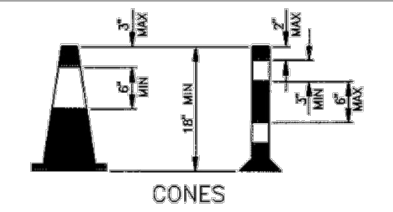
DEMOUNTABLE TYPE III BARRICADE



DRUMS

DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL CIRCUMFERENTIAL REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPRIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.

CW1-8 CHEVRON SIGNS, CW1-6A ARROW SIGNS OR VP-1 VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.

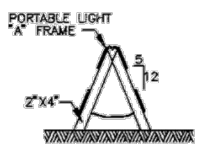


CONES

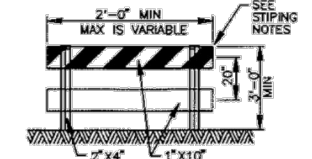
TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.

REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE-INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.

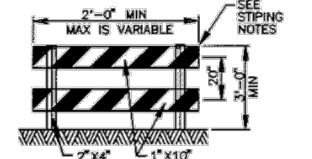
CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.



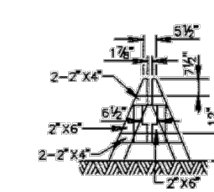
"A" FRAME



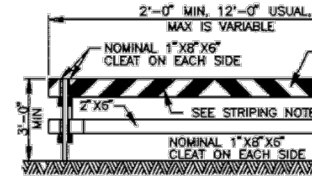
TYPE I



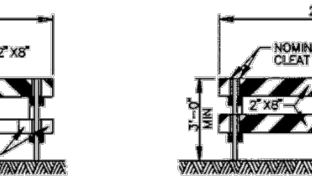
TYPE II



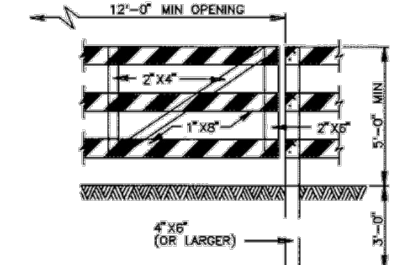
DEMOUNTABLE



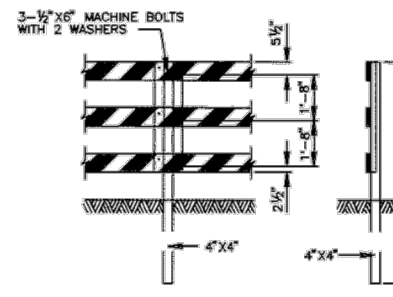
TYPE I



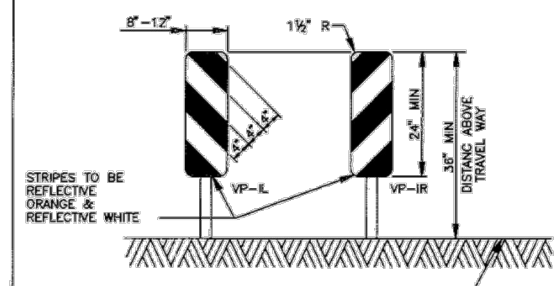
TYPE II



GATE FOR TYPE III BARRICADE

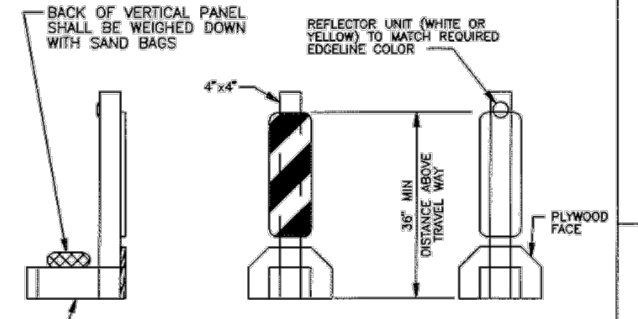


POST FOR TYPE III BARRICADE



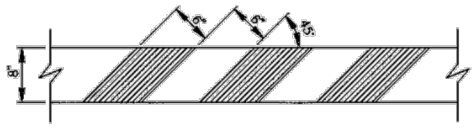
VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP-OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO-WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.



TYPICAL PORTABLE VERTICAL PANEL OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED OR DIRECTED BY THE COH DEPT OF TRAFFIC AND TRANSPORTATION



STRIPING FOR BARRICADE

FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.

STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC. SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45 DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.

WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

BARRICADE STANDARD
 (NOT TO SCALE)

APPROVED BY:	APPROVED BY:
<i>[Signature]</i>	<i>[Signature]</i>
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 01580-01

CITY OF HOUSTON
 HOUSTON AIRPORT SYSTEM
 Recommended by: [Signature]
 Houston Airport System
 Director or Designated Representative