OWNER: CLUB DEAL 116 INDIAN HILLS, TX LIMITED PARTNERSHIP &
CLUB DEAL 120 WHISPER VALLEY, TX LIMITED PARTNERSHIP
9285 HUNTINGTON SQUARE
NORTH RICHLAND HILLS, TX 76182
(817) 788-1000

ENGINEER: BURY, INC.
221 WEST SIXTH STREET, SUITE 600
AUSTIN, TEXAS 78701
(512) 328-0011

INDIAN HILLS 48-INCH WATERLINE EXTENSION NO. 1 PHASE 1b & 1c

CITY OF AUSTIN, TEXAS

MAY 2016

WATERSHED STATUS:

THIS SITE IS LOCATED IN THE ELM CREEK AND DECKER CREEK WATERSHED WHICH ARE CLASSIFIED AS SUBURBAN WATERSHED BY THE CITY OF AUSTIN AND SHALL BE DEVELOPED, CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH CHAPTER 25 OF THE CODE OF THE CITY OF AUSTIN. THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AS DEFINED BY THE CITY OF AUSTIN. THIS PROJECT IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE AS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ).

FLOODPLAIN INFORMATION:

THIS SITE IS LOCATED OUTSIDE THE BOUNDARIES OF THE 100 YEAR FLOODPLAIN, AS SHOWN ON THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO.'S 48453C0490J DATED AUGUST 18, 2014 FOR TRAVIS COUNTY, TEXAS.

LEGAL DESCRIPTION:

PROJECT SITE IS WITHIN THE PUBLIC RIGHT-OF-WAY OF DECKER LAKE ROAD FROM BLUE BLUFF ROAD TO FM 973. THE PROJECT IS LOCATED WITHIN A WATER LINES EASEMENT #2013161863 FROM FM 973 TO SH 130. PER OFFICIAL PUBLIC RECORDS.

BENCHMARK NOTE:

SEE SHEET 5

GENERAL CONSTRUCTION NOTES:

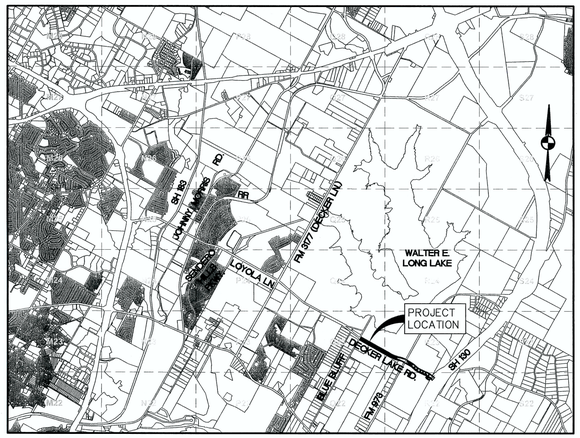
1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF AUSTIN MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. CONTRACTOR SHALL CALL THE ONE CALL CENTER (472-2822) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W.
3. CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION (DPWT) AT (512) 499-7161 AT LEAST 24 HOURS PRIOR TO STARTING CONSTRUCTION OR CLEARING OPERATIONS. THE INSTALLATION OF WATERLINE IN STREET R.O.W. OR EASEMENT AND THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S R.O.W. MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.
4. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 509 AND APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). .
5. NO PORTION OF THIS SITE IS LOCATED WITHIN PARKLAND OR LAND USED FOR PARK PURPOSES.
6. PROJECT SCHEDULE MUST BE APPROVED BY THE PROJECT MANAGER. INSTALLATION AND REMOVAL OF TEMPORARY AND PERMANENT EROSION/SEDIMENTATION CONTROLS MUST BE REFLECTED IN THE SCHEDULE, BY STATION NUMBER. GENERAL PERMIT PROGRAM INSPECTOR MUST BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF TRANSITION BETWEEN PHASES.
7. THE MAJORITY OF THE PROJECT IS WITHIN THE R.O.W AND THEREFORE NO ENVIRONMENTAL ASSESSMENT IS REQUIRED FOR THIS PORTION. THE ENVIRONMENTAL ASSESSMENT FOR THE PROJECT EAST OF THE EASTERN R.O.W LINE OF FM 973 IS ADDRESSED UNDER THE DOCUMENT: "ENVIRONMENTAL DOCUMENT DECKER LAKE ROAD EXTENSION 0.11 MI. WEST OF FM 973 TO SH 130 SBFR AUSTIN, TRAVIS COUNTY, TEXAS" DATED MAY 23, 2011, PREPARED BY BURY + PARTNERS, INC.
8. SPOILS TO BE HAULED OFF AND DISPOSED AT AN APPROVED DUMPING SITE.
9. NO NEW AND/OR REDEVELOPED IMPERVIOUS COVER IS PROPOSED WITH THIS SITE PLAN.

OWNER: _____ ADDRESS: _____
PHONE: _____

NAME: _____ PHONE: _____ .
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS.

NAME: CONTRACTOR PHONE: _____ .
PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTAION CONTROL MAINTENANCE.

NAME: CONTRACTOR PHONE: _____ .
PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE.



CITY GRIDS: Q23, R22, AND R23
MAPSCO: PG. 588

LOCATION MAP
SCALE: 1" = 1 MILE

PRESSURE ZONE: CENTRAL

WAIVER BLOCK:

THIS PROJECT HAS REQUESTED A WAIVER FROM THE CITY OF AUSTIN UTILITY CRITERIA MANUAL SECTION 2.9.2(C) 2 REQUIRES VALVE SPACING NOT TO EXCEED 2,000 LINEAR FEET.

_____
APPROVED FOR AUSTIN WATER UTILITY DATE

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER
2	GENERAL NOTES
3	GENERAL NOTES
4	GENERAL NOTES
5	OVERALL SITE PLAN
6	OVERALL PROFILE
7	PLAN AND PROFILE STA. 150+00 – 157+00
8	PLAN AND PROFILE STA. 157+00 – 164+00
9	PLAN AND PROFILE STA. 164+00 – 171+00
10	PLAN AND PROFILE STA. 171+00 – 178+00
11	PLAN AND PROFILE STA. 178+00 – 185+00
12	PLAN AND PROFILE STA. 185+00 – 192+00
13	PLAN AND PROFILE STA. 192+00 – 199+00
14	PLAN AND PROFILE STA. 199+00 – END
15	WATER DETAILS
16	WATER DETAILS
17	WATER DETAILS
18	WATER DETAILS
19	WATER DETAILS
20	PAVEMENT DETAIL
21	PAVEMENT DETAIL
22	PAVEMENT DETAIL
23	EROSION CONTROL OVERALL SITE PLAN
24	EROSION CONTROL PLAN AND TREE PROTECTION
25	EROSION CONTROL PLAN AND TREE PROTECTION
26	EROSION CONTROL PLAN AND TREE PROTECTION
27	EROSION CONTROL PLAN AND TREE PROTECTION
28	EROSION CONTROL AND TREE PROTECTION DETAILS
29	EROSION CONTROL AND TREE PROTECTION DETAILS
30	TRAFFIC CONTROL PLAN 1
31	TRAFFIC CONTROL PLAN 2
32	TRAFFIC CONTROL DETAIL
33	TRAFFIC CONTROL DETAIL
34	TRAFFIC CONTROL DETAIL
35	TRAFFIC CONTROL DETAIL
36	TRAFFIC CONTROL DETAIL
37	TRAFFIC CONTROL DETAIL
38	TRAFFIC CONTROL DETAIL
39	TRAFFIC CONTROL DETAIL
40	TRAFFIC CONTROL DETAIL
41	TRAFFIC CONTROL DETAIL
42	TRAFFIC CONTROL DETAIL
43	TRAFFIC CONTROL DETAIL
44	TRAFFIC CONTROL DETAIL
45	TRAFFIC CONTROL DETAIL

APPROVED FOR ACCEPTANCE:

TNR# 15-8904 6/13/16
TRAVIS COUNTY DATE

AUS20150827105339 02/05/2016
TEXAS DEPARTMENT OF TRANSPORTATION DATE

DEVELOPMENT SERVICES DEPARTMENT DATE

FO/OM 6/13/16
AUSTIN WATER UTILITY DATE

SP-2015-0337D
SITE PLAN/DEVELOPMENT PERMIT NUMBER

PERMIT NO. : SP-2015-0337D
SUBMITTAL DATE: AUGUST 31, 2015
ADDRESS : 10000 BLOCK TO 13000 BLOCK DECKER LAKE ROAD AUSTIN, TEXAS 78724

SUBMITTED BY : _____ DATE 5/6/16
ALDO J. SOTELO, P.E.
BURY, INC.
221 WEST SIXTH STREET, SUITE 600
AUSTIN, TEXAS 78701
(512) 328-0011

STATE OF TEXAS · ALDO J. SOTELO · 106323 · LICENSED PROFESSIONAL ENGINEER

5/6/16

NO.	CITY OF AUSTIN REVISION DESCRIPTION	REVISE (R) ADD(A) VOID (V) SHEET NO.'S	TOTAL # SHEETS IN PLAN SET	NET CHANGE IMP. COVER (SQ. FT,)	TOTAL SITE IMP. COVER (SQ. FT.) %	DATE IMAGED

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2016

Inspection Notice: Please call Development Services Department, Site & Subdivision Inspection at 512-974-6360 for arrangements for payment of inspection fees and job assignment for inspection of the public utilities to this site. Inspection fees must be paid before any Pre-construction meeting can be held.

AUSTIN WATER UTILITY
EXPIRATION DATE
JUN 13 2018

RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 1 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

G:\106960\10026\CD DWG\106960026CVR01.dwg modified by jthompson on May 2, 16 1:53 PM

AUSTIN WATER UTILITY GENERAL CONSTRUCTION NOTES
April 13, 2015

1. THE CITY STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE TIME OF BIDDING SHALL COVER MATERIAL AND METHODS USED TO DO THIS WORK.
2. CONTRACTOR MUST OBTAIN A STREET CUT PERMIT FROM WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT, RIGHT-OF-WAY MANAGEMENT DIVISION BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY.
3. AT LEAST 48 HOURS BEFORE BEGINNING ANY WATER AND WASTEWATER CONSTRUCTION IN PUBLIC R.O.W. OR PUBLIC EASEMENT, THE CONTRACTOR SHALL NOTIFY WATERSHED PROTECTION AND DEVELOPMENT REVIEW INSPECTION OR WATER AND WASTEWATER UTILITY TAPS INSPECTION AT THE NUMBER INDICATED ON THE PLANS BY THE AWU PLAN REVIEWER.
4. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA 'ONE CALL' SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF AUSTIN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.
5. NO OTHER UTILITY SERVICE/APPURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES.
6. THE CITY SPECIFICATION ITEM 509S WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE.
7. ALL MATERIALS TESTS, INCLUDING SOIL DENSITY TESTS AND DETAILED SOIL ANALYSES, SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY AND FUNDED BY THE OWNER IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 1804S.04.
8. PRESSURE TAPS SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.3(24). THE CONTRACTOR SHALL PERFORM EXCAVATION ETC., AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. WHEN CONTRACTORS MAKE THE TAP A CITY INSPECTOR MUST BE PRESENT AND 2 WORKING DAYS (MIN.) NOTICE MUST BE GIVEN. "SIZE ON SIZE" TAPS WILL NOT BE PERMITTED, UNLESS, IT HAS BEEN DEMONSTRATED THAT A MORE ACCEPTABLE CONNECTION WOULD INVOLVE CONSIDERABLE HARDSHIP TO THE UTILITY SYSTEM. ALL TAPS SHALL BE MADE BY USE OF AN APPROVED FULL CIRCLE-GASKETED CAST IRON OR DUCTILE IRON TAPPING SLEEVE. CONCRETE BLOCKING SHALL BE PLACED UNDER ALL TAP SLEEVES PRIOR TO MAKING THE PRESSURE TAP AND THE USE OF PRECAST BLOCKS MAY BE USED TO HOLD THE TAP IN ITS CORRECT POSITION PRIOR TO BLOCKING. THE BLOCKING BEHIND AND UNDER THE TAP SHALL HAVE A MINIMUM OF 24 HOURS CURING TIME BEFORE THE VALVE CAN BE RE- OPENED FOR SERVICE FROM THAT TAP.
9. THRUST RESTRAINT SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.(22).
10. ALL BRANCH CONNECTIONS SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON THE PLANS BY THE DESIGN ENGINEER.
11. A). FIRE HYDRANTS SHALL BE SET IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 511S.4 B) FIRE HYDRANTS SHALL BE PAINTED FLYNT ALUMINUM OR EQUAL.
12. WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.3(27)-(29). FORCE MAIN PRESSURE TESTING SHALL BE CONDUCTED AND FALL UNDER THE SPECIFICATIONS AS WATER LINES (PRESSURE PIPE) OR AT THE PRESSURES SHOWN ON THE APPROVED PLANS.
13. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED HAS TO GO THROUGH THE REVIEW OF THE STANDARDS COMMITTEE FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.
14. WHEN WATER SERVICES ARE DAMAGED AND THE SERVICE MATERIAL IS PE, THE LINE SHALL BE REPAIRED ONLY BY HEAT FUSION WELD OR REPLACED THE FULL LENGTH WITH TYPE K COPPER MATERIAL. ANY TIME PB IS DAMAGED OR TAMPERED WITH IN ANY WAY, THE SERVICE LINE SHALL BE REPLACED FULL LENGTH WITH TYPE K COPPER MATERIAL. NOTE: FULL LENGTH IS FROM CORPORATION STOP TO METER.
15. WHEN AN EXISTING WATERLINE SHUT OUT IS NECESSARY AND POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR WHO WILL THEN NOTIFY THE AUSTIN WATER UTILITY DISPATCH AND THE AFFECTED CUSTOMERS A MINIMUM OF SEVENTY-TWO (72) HOURS IN ADVANCE.
16. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR SO THAT HE CAN NOTIFY THE AUSTIN WATER UTILITY AT 972-0000 AT A MINIMUM OF 72 HOURS PRIOR TO RELOCATING ANY DOMESTIC OR FIRE DEMAND WATER METERS. THE CONTRACTOR SHALL CARFULLY REMOVE ALL METERS AND METERS BOXES THAT ARE INDICATED TO BE RELOCATED OR SALVAGED. THE CONTRACTOR SHALL INSTALL THE REMOVED METER OR CITY PROVIDED METER AT THE NEW LOCATION INDICATED ON THE CONTSTRUCTION PLANS.
17. ALL MANHOLES IN UNPAVED AREAS PROVIDING DIRECT ACCESS TO A WASTEWATER LINE SHALL BE WATERTIGHT AND BEAR THE WORDING AND INSIGNIA FOR THE CITY OF AUSTIN.
18. THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL LOCATIONS OF EXISTING UTILITIES PRIOR TO STARTING ONSITE UTILITY WORK.
19. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN DOES NOT REMOVE THESE RESPONSIBILITIES.
20. REVIEW BY THE AUSTIN WATER UTILITY APPLIES ONLY TO FACILITIES WITHIN PUBLIC STREETS OR PUBLIC UTILITY EASEMENTS. ALL OTHER WATER AND WASTEWATER FACILITIES INSIDE PRIVATE PROPERTY ARE UNDER THE JURISDICTION OF BUILDING INSPECTION.
21. ALL WATER AND WASTEWATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED IN CHAPTER 290-DRINKING WATER STANDARDS, AND CHAPTER 217-DESIGN CRITERIA FOR SEWAERAGE SYSTEMS, OF TCEQ RULES.
22. CONTRACTOR'S PERSONNEL THAT PERFORM BUTT FUSION AND ELECTROFUSIONON ON OR TO HDPE PIPE AND FITTINGS MUST HAVE CURRENT QUALIFICATION TRAINING CERTIFICATE ISSUED BY MCELROY OR COMPARABLE TRAINING PROGRAM.
23. SHOP DRAWINGS SHALL BE SUBMITTED FOR AWU APPROVAL FOR LARGE DIAMETER PRE-CAST MANHOLES, JUNCTION BOXES, WET WELLS, AND SIMILAR STRUCTURES. THE SHOP DRAWINGS SHALL INCLUDE FLOWLINE ELEVATIONS OF ALL INCOMING AND OUTGOING PIPES, ELEVATION OF TRANSITION FROM LARGE DIAMETER SECTIONS TO 48" ID SECTION, TOP OF MANHOLE ELEVATION, SURROUNDING GROUND ELEVATION, AS WELL AS SPECIAL CONSTRUCTION CONSIDERATIONS THAT ARE SPECIFIED IN THE CONTRACT DRAWINGS.
24. VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE OF IRON ROD OF THE REQUIRED LENGTH WITH A SOCKET ON ONE END AND NUT ON THE OTHER.
25. ASBESTOS CONCRETE PIPE (AC PIPE) HAS BEEN INSTALLED IN THE PAST AS PART OF AUSTIN WATER UTILITY'S WATER DISTRIBUTION AND WASTEWATER COLLECTION SYSTEMS. AUSTIN WATER UTILITY'S INFRASTRUCTURE INCLUDES AC PIPE THAT IS CURRENTLY IN SERVICE AS WELL AS AC PIPE THAT HAS BEEN ABANDONED AND IS NO LONGER IN SERVICE. RECORD INFORMATION MAY NOT BE COMPLETE FOR THE PROJECT. CONTRACTORS AND SUBCONTRACTORS MUST BE ALERT TO THE POSSIBLE PRESENCE OF AC PIPE WITHIN THE LIMITS OF THE PROJECT AND BE KNOWLEDGEABLE OF HOW TO IDENTIFY IT. DISTURBANCE, REMOVAL OR CUTTING OF ASBESTOS CONTAINING PIPE IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE 25, SECTION 15, ARTICLE 4477-3A AND 29 CFR 1926.1101. CONTACT THE CITY OF AUSTIN ASBESTOS MANAGER AT 512-974-7154 THIRTY (30) DAYS PRIOR TO THE PLANNED DISTURBANCE OF THE AC PIPE. ONLY STATE LICENSED PERSONNEL ARE PERMITTED TO DISTURB, REMOVE, TRANSPORT AND DISPOSE OF AC PIPE.

PROJECT CONSTRUCTION NOTES

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND AVOIDING ANY AND ALL EXISTING OVERHEAD OR UNDERGROUND UTILITIES.
2. EXISTING DRIVEWAY CULVERTS THAT ARE REQUIRED TO BE REMOVED AND REPLACED DUE TO THE INSTALLATION OF THE 48" WATER LINE SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF REPLACING AND REBUILDING THE DRIVEWAY.
3. ALL DRIVEWAYS THAT ARE CROSSED BY THE 48" WATER LINE SHALL BE REPLACED WITH A LIKE MATERIAL. ASPHALT AND CONCRETE DRIVES WILL BE SAW-CUT AT THE TRENCH LIMITS TO ENSURE A CLEAN, STRAIGHT LINE TO BE REPLACED.
4. ALL WATER LINE IN THIS PROJECT WILL BE DUCTILE IRON, CLASS 250. JOINT DEFLECTIONS SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.
5. EXISTING TRAFFIC ON ALL ROADS TO BE MAINTAINED AT ALL TIMES. ONE LANE OF TRAFFIC TO BE KEPT OPEN AT ALL TIMES. FULL ROAD CLOSURES ARE NOT ALLOWED.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY ADDITIONAL PERMITS OR LICENSES AND PAYING ANY FISCAL OR FEES, INCLUDING POSTING FISCAL FOR EROSION AND SEDIMENTATION CONTROLS PRIOR TO CONSTRUCTION, FOR ANY STAGING AND FOR SPOILS AREAS NOT CURRENTLY SHOWN ON THE DRAWINGS.
7. CONTRACTOR MAY NOT BLOCK, DIRECT, IMPEDE, OR REROUTE PEDESTRIAN AND VEHICULAR TRAFFIC, NOR PLACE A BARRICADE OR OTHER TRAFFIC CONTROL DEVICE IN A RIGHT-OF-WAY, WITHOUT FIRST OBTAINING A TEMPORARY USE OF RIGHT-OF-WAY PERMIT FROM THE DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION.
8. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS THAT ARE REQUIRED TO COMPLY WITH SECTIONS 15-12-161 THROUGH 15-12-181 OF THE CITY CODE REGARDING EXCAVATION IN PUBLIC RIGHT-OF-WAY.
9. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF PERMANENT PAVEMENT MARKINGS. TO A CONDITION EQUAL OR BETTER THAN EXISTING CONDITION PRIOR TO CONSTRUCTION.

WATER LINE DISINFECTION NOTES

1. CONTRACTOR SHALL SUBMIT A DISINFECTION PLAN FOR REVIEW AND APPROVAL PRIOR TO ANY DISINFECTION WORK. IN ADDITION TO THE PROPOSED WATERLINE SHOWN ON THESE PLANS, CONTRACTOR'S DISINFECTION SCOPE SHALL INCLUDE THE SECTION OF EXISTING 48 INCH WATERLINE LOCATED ON DECKER LAKE ROAD BETWEEN DECKER LANE AND THE CONNECTION POINT TO PHASE 1B OF THE PROPOSED 48 INCH WATERLINE (STA. 155+11). ONCE APPROVED BY CITY AND ENGINEER CONTRACTOR SHALL COORDINATE IMPLEMENTATION OF THE DISINFECTION PLAN WITH DESIGNATED CITY INSPECTOR.

TRAVIS COUNTY GENERAL NOTES

TRAVIS COUNTY CONSTRUCTION NOTES FOR SITE DEVELOPMENT AND TRAVIS COUNTY CONSTRUCTION NOTES FOR SUBDIVISION DEVELOPMENT STREETS, DRAINAGE, WATER AND WASTEWATER

1. DRIVEWAY AND DRAINAGE CONSTRUCTION STANDARDS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TRAVIS COUNTY STANDARDS UNLESS OTHERWISE SPECIFIED AND APPROVED BY TRAVIS COUNTY.
2. PRIOR TO BEGINNING ANY CONSTRUCTION, A TRAVIS COUNTY BASIC DEVELOPMENT PERMIT SHALL BE OBTAINED AND POSTED ON THE JOB SITE. DEVELOPMENT OUTSIDE OF APPROVED CONSTRUCTION BOUNDARIES IS PROHIBITED WITHOUT A REVISED PERMIT.
3. PRIOR TO BEGINNING ANY CONSTRUCTION, THE TEMPORARY EROSION CONTROL ITEMS SHALL BE IN PLACE.
4. A TRAFFIC CONTROL PLAN SHALL BE REVIEWED AND APPROVED BY TRAVIS COUNTY PRIOR TO BEGINNING CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY.
5. THE CONTRACTOR SHALL NOTIFY TRAVIS COUNTY AT 854-9383 (PLANNING AND ENGINEERING SERVICES DIVISION) AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION AND TO SCHEDULE A MANDATORY PRE-CONSTRUCTION CONFERENCE.
6. CONTOUR DATA SOURCE:

   AERIAL TOPOGRAPHY PHOTOGRAMMETRICALLY COMPILED BY PRO-TERRA AERIAL MAPPING INC., PO BOX 150684, AUSTIN, TX 78715-0684, PROJECT NO. 12-01, DATED 1-27-2012.
7. CONTRACTOR SHALL NOT STOCKPILE MATERIAL WITHIN THE 100-YEAR FLOOD PLAIN OR AREAS OUTSIDE OF PERMIT BOUNDARIES. ANY REGULATORY PERMITS REQUIRED FOR DISPOSAL OF EXCESS EXCAVATED MATERIAL OFF THE PERMIT SITE MUST BE OBTAINED FROM THE APPLICABLE JURISDICTIONS. DISPOSAL OF SOLID WASTE MATERIALS, AS DEFINED BY STATE LAW (LITTER, TIRES, DECOMPOSABLE WASTES, ETC.) IS PROHIBITED IN PERMANENT FILL SITES.
8. WITHIN TRAVIS COUNTY RIGHT-OF-WAY, DRIVEWAYS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF AUSTIN CRITERIA, EXCEPT AS NOTED IN 82.302 (G) OF THE STANDARDS.
9. THE DESIGN ENGINEER IS RESPONSIBLE FOR THE ADEQUACY OF THE CONSTRUCTION PLANS. IN REVIEWING THE CONSTRUCTION PLANS, TRAVIS COUNTY WILL RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
10. A MINIMUM OF TWO SURVEY BENCHMARKS SHALL BE SET AND DESCRIBED PER SUBDIVISION INCLUDING DESCRIPTION, LOCATION, AND ELEVATION. TIE TO TRAVIS COUNTY STANDARDS WHEN POSSIBLE.
11. ANY EXISTING PAVEMENT, CURBS, SIDEWALKS, OR DRAINAGE STRUCTURES WITHIN COUNTY RIGHT-OF-WAY WHICH ARE DAMAGED, REMOVED, OR SILTED, WILL BE REPAIRED BY THE CONTRACTOR AT HIS/HER EXPENSE BEFORE APPROVAL OF THE CONSTRUCTION.
12. THE ONE-CALL UTILITY SYSTEM WILL BE USED; DIAL 472-2822 AND THE TEXAS UNDERGROUND FACILITY NOTIFICATION CORPORATION AT LEAST 48 HOURS BEFORE YOU DIG.
13. ALL STORM SEWER PIPES SHALL BE CLASS III RCP, UNLESS OTHERWISE NOTED.
14. CONTRACTOR IS REQUIRED TO OBTAIN A TRAVIS COUNTY WORK IN RIGHT-OF-WAY (UTILITY INSTALLATION NOTICE) PERMIT PRIOR TO ANY CONSTRUCTION OF UTILITIES WITHIN ANY TRAVIS COUNTY RIGHT-OF-WAY.
15. FLOOD INSURANCE RATE MAP:

   THIS SITE IS LOCATED OUTSIDE THE BOUNDARIES OF THE 100 YEAR FLOODPLAIN, AS SHOWN ON THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO.'S 48453C0470H DATED SEPTEMBER 26, 2008 AND 48453C0490H DATED SEPTEMBER 26, 2008 FOR TRAVIS COUNTY, TEXAS.
16. SOIL DATA SOURCES:

   PRELIMINARY GEOTECHNICAL ENGINEERING STUDY
   INDIAN HILLS 48-INCH WATERLINE NO. 1
   BY RABA-KISTNER CONSULTANTS, INC. (TO BE PROVIDED LATER)
17. ALL TREES WITHIN THE RIGHT-OF-WAY AND DRAINAGE EASEMENTS SHALL BE SAVED OR REMOVED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLANS.
18. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED WITH TNR PRIOR TO START OF ANY CONSTRUCTION IN TRAVIS COUNTY RIGHT-OF-WAY.
19. THE UTILITY CONTRACTOR SHALL GIVE TNR AT LEAST 48 HOURS NOTICE PRIOR TO CONSTRUCTION.
20. PRIOR TO BEGINNING ANY CONSTRUCTION, THE TEMPORARY EROSION CONTROL ITEMS SHALL BE IN PLACE.
21. CONTRACTOR SHALL KEEP THE TNR PLANNING AND ENGINEERING SERVICES DIVISION (854-9383) CURRENT ON THE STATUS OF EACH STAGE OF CONSTRUCTION ACTIVITY.
22. TNR APPROVAL OF THE CONSTRUCTION IS REQUIRED ON ALL WORK COMPLETED PRIOR TO ACCEPTANCE AND COMMENCEMENT OF ONE-YEAR PERFORMANCE PERIOD.
23. THE CONTRACTOR SHALL INSTALL ALL TRAFFIC MARKING AND SIGNAGE PER CURRENT TXDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PRIOR TO TNR APPROVAL.

AUSTIN ENERGY GENERAL NOTES

1. A PRE-CONSTRUCTION SAFETY MEETING IS REQUIRED WITH AUSTIN ENERGY (AE) 48 HOURS BEFORE COMMENCEMENT OF CONSTRUCTION. FAILURE TO DO SO WILL RESULT IN THE PROJECT BEING SHUT DOWN. CALL DOUG WEISE AT (512) 505-7023 TO SCHEDULE A TAILGATE SAFETY MEETING. INCLUDE CHUCK HENRY AT (512) 505-7151 IN THE MEETING, IF CRANES ARE BEING USED DURING CONSTRUCTION.
2. DON PLEASANT AT (512) 505-7223 IS AUSTIN ENERGY CONTACT FOR ANY ISSUES REGARDING THE EXISTING OVERHEAD AND UNDERGROUND DISTRIBUTION FACILITIES.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCES WILL BE CHARGED TO THIS PROJECT.
4. ANY RELOCATION OF ELECTRIC TRANSMISSION OR DISTRIBUTION FACILITIES OR OUTAGES CAUSED BY THIS PROJECT WILL BE CHARGED TO THE CONTRACTOR.
5. WARNING SIGNS MUST BE PLACED UNDER THE OVERHEAD ELECTRIC TRANSMISSION FACILITIES AS NOTIFICATION OF THE ELECTRICAL HAZARD.
6. PRIOR TO MOBILIZING TALL EQUIPMENT SUCH AS CRANES, CALL DOUG WEISE AT (512) 505-7023 TO COORDINATE WITH TRANSMISSION PERSONNEL.
7. BORE MACHINES, CONSTRUCTION EQUIPMENT, DUMPSTERS, STAGING AND SPOILS AREAS ARE NOT PERMITTED WITHIN 20 FEET OF THE ELECTRIC TRANSMISSION FACILITIES FOR SAFETY REASONS.
8. BORING AND CRANE EQUIPMENT SHALL NOT BE STORED WITHIN 56 FEET OF THE ELECTRIC FACILITIES FOR SAFETY REASONS.
9. 24 HOUR ACCESS TO ELECTRIC FACILITIES SHALL BE MAINTAINED.
10. TEMPORARY OR PERMANENT FENCING THAT PREVENTS ACCESS TO THE EASEMENT SHALL BE COORDINATED WITH AE. AE WILL INSTALL A LOCK ON THE GATE FOR ACCESS. GROUNDING REQUIREMENTS FOR FENCING WILL BE DETERMINED BY AE STAFF..
11. AUSTIN WATER UTILITY AND THEIR CONTRACTOR ARE RESPONSIBLE FOR DUST CONTROLS TO MINIMIZE CONTAMINATION OF WIRE AND INSULATORS. ANY SUBSEQUENT CLEANING OR ELECTRICAL OUTAGES CAUSED BY DUST FROM THIS PROJECT WILL BE CHARGED TO THE CONTRACTOR.
12. ANY OUTAGES CAUSED BY THIS PROJECT WILL BE CHARGED TO THE CONTRACTOR.
13. BORE MACHINES, DUMPSTERS, STAGING AND SPOILS AREAS ARE NOT PERMITTED WITHIN 20 FEET OF THE ELECTRIC FACILITIES FOR SAFETY REASONS.

TXDOT GENERAL NOTES

1. LANE CLOSURES (IF REQUIRED) WILL ONLY BE ALLOWED BETWEEN 9 AM AND 4PM MONDAY THROUGH FRIDAY.
2. LANE CLOSURES ARE NOT ALLOWED IN INCLEMENT WEATHER OR IF THE PAVEMENT IS WET OR ICY.
3. CONTRACTOR MUST CONTACT HOUMAN HEMATI AT (512) 997-2239 (48) HOURS IN ADVANCE OF ANY WORK OR TRAFFIC CONTROL OPERATION WITHIN TXDOT RIGHT-OF-WAY.
4. THE UTILITY COMPANY OR ITS CONTRACTOR WILL BE HELD RESPONSIBLE FOR KEEPING THE STATE ROADWAY FREE OF MUD, ROCKS, AND GENERAL DEBRIS.
5. CONSTRUCTION EQUIPMENT LEFT OVERNIGHT IN THE RIGHT OF WAY MUST BE SECTIONED OFF WITH ORANGE PLASTIC MESH FENCING, AND BE PLACED AT LEAST 30' OFF THE EDGE OF PAVEMENT. EQUIPMENT LOCATED CLOSER THAN 30' MUST BE PROTECTED BY CONCRETE TRAFFIC BARRIERS (CTB).
6. FIELD CREWS WILL NOT BE ALLOWED TO PARK THEIR VEHICLES WITHIN THE STATE RIGHT OF WAY.
7. ALL UTILITY PITS OPENED WITHIN 30' OF A TXDOT TRAVEL LANE SHALL BE PROPERLY PROTECTED, IN COMPLIANCE WITH THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROJECT REPORT 350, WITH CONCRETE TRAFFIC BARRIERS, METAL GUARD FENCING, APPROPRIATE END TREATMENTS, OR OTHER APPROPRIATE WARNING DEVICES AS APPROVED BY TXDOT.
8. ALL ASPHALT AND CONCRETE DRIVEWAYS LOCATED WITHIN THE STATE RIGHT OF WAY MUST BE BORED. AN EXCEPTION TO THIS RULE WILL BE ALLOWED, ONLY IF THE OWNER OF THE DRIVEWAY IS WILLING TO PROVIDE TXDOT A LETTER GRANTING THE CONTRACTOR PERMISSION TO OPEN CUT THEIR DRIVEWAY. THE LETTER MUST BE SIGNED AND REFLECT THE PROPERTY OWNERS NAME, ADDRESS, AND PHONE NUMBER. TXDOT MAY CONTACT THE OWNER TO VERIFY THE LETTER ACCURACY.
9. TRAFFIC CONTROL MUST CONFORM TO TXDOT REQUIREMENTS AND RECOMMENDATIONS, AND SHOULD MEET OR EXCEED TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).
10. THE UTILITY COMPANY AND OR ITS CONTRACTOR MUST LOCATE EXISTING UTILITY LINES PRIOR TO DOING ANY GROUND WORK LIKE BORING, DIGGING, TRENCHING, OR DRILLING WITHIN THE RIGHT OF WAY.
11. THE PERMIT HOLDER WILL BE REQUIRED TO RESTORE THE GROUND TO ITS PRIOR STATE, AND REVEGETATE ALL DISTURBED AREAS.

LEGEND

EXISTING	PROPOSED		EXISTING	PROPOSED	
(XXX)		PROPERTY (R.O.W.) LINE			TREE PROTECTION
P.O.B.		RECORD INFORMATION			SILT FENCE
		POINT OF BEGINNING		LOC	LIMITS OF CONSTRUCTION
		BENCHMARK			ROCK BERM
		1/2" IRON ROD FOUND (OR AS NOTED)			INLET PROTECTION
		1/2" IRON ROD SET			STABILIZED CONSTRUCTION ENTRANCE
		IRON PIPE FOUND			CONSTRUCTION STAGING AREA
		NAIL FOUND			TEMPORARY SPOIL DISPOSAL AREA
		COMPUTED POINT			TOPSOIL STORAGE AREA
		MONUMENT FOUND			CONSTRUCTION PARKING AND STORAGE AREA
		MONUMENT SET			GABION
X		CUT "X"			ASPHALT PAVING REPAIR
	B-"X"	BORE LOCATION			DIRECTION OF FLOW
TBM "#"		TEMPORARY BENCHMARK LOCATION	-678-		CONTOUR
		LIGHT POLE	100.0 x		SPOT ELEVATION
		POWER POLE	1170		TREE TO REMAIN
		DOWN GUY	1124		TREE TO BE REMOVED (R)
		TRANSFORMER (SIZE VARIES)	CWQZ		CRITICAL WATER QUALITY ZONE
			WQTZ		WATER QUALITY TRANSITION ZONE
					FEMA 100-YR FLOODPLAIN
					CENTERLINE OF CREEK
					POND/WETLAND
					CITY OF AUSTIN ETJ
					FIRE HYDRANT
					WATER VALVE
					WATER METER
			AARVO		WATER AUTOMATIC AIR RELEASE VALVE
			W		48" ø DI WATER LINE
					66"ø ENCASEMENT PIPE
					BORE PIT
					RECEIVING PIT
					WATER DRAIN VALVE
					SAMPLE PORT
					WATER TEE AND GATE VALVE
			WMH		WATER MANHOLE (SIZE VARIES)
					WATER METER VAULT
TCB		TRAFFIC CONTROL BOX			
TSP		TRAFFIC SIGNAL POST			
		SIGN			
		BOLLARD			
		GRATE INLET			
		CURB INLET (SIZE VARIES)			
		WOOD FENCE			
		METAL FENCE			
		WIRE FENCE			
SS		STORMSEWER LINE			
		FIRE LINE			
WW		WASTEWATER LINE			
UE		UNDERGROUND ELECTRIC			
OE		OVERHEAD ELECTRIC			
UT		UNDERGROUND TELEPHONE			
G		GAS LINE			
T		TELEPHONE/FIBER OPTIC CABLE			
		LANDSCAPE LINES			
EMH		ELECTRIC MANHOLE (SIZE VARIES)			
SSMH		STORMSEWER MANHOLE (SIZE VARIES)			
TMH		TELEPHONE MANHOLE (SIZE VARIES)			
CO		WASTEWATER CLEANOUT			

REVIEWED
JUN 13 2016
Gene Rhoads
Austin Water Utility

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 2 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

DATE	NO.	REVISION	APPROVAL
5/6/16			

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2015

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

GENERAL NOTES

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 2 OF 45

G:\106960\10026\CD DWG\106960026GNS01.dwg modified by jthompson on Oct 23, 15 11:39 AM

SP-2015-0337D

CITY OF AUSTIN RIGHT-OF-WAY NOTES:

1. APPROVAL OF SITE PLAN DOES NOT ALLOW FOR ANY WORK IN THE RIGHT OF WAY TO BE CONDUCTED WITHOUT TEMPORARY USE OF RIGHT OF WAY PERMIT:
   A. EXCAVATIONS FOR UTILITY WORK WILL REQUIRE AND EXCAVATION PERMIT. (EX)
   B. ALL DRIVEWAYS AND CONCRETE WORK WILL REQUIRE A DRIVEWAY/SIDEWALK PERMIT. (DS)
   C. ALL TRAFFIC CONTROL AND PEDESTRIAN PROTECTION NOT RELATED TO THE EX PERMIT (SUCH AS STORAGE AREAS) WILL REQUIRE A TEMPORARY USE OF PERMIT (RW) AND APPROVAL FORM THE ATD-ROW MGMT OFFICE.
2. APPROVED SET OF PLANS MUST BE SUBMITTED TO ROW MANAGEMENT BEFORE EXCAVATION PERMITS WILL BE APPROVED. PLEASE DELIVER TO:
   MARKUS ROBY
   ONE TEXAS CENTER
   505 BARTON SPRINGS RD SUITE 800

   ONCE PLANS ARE RECEIVED, PLEASE VISIT: HTTPS://WWW.CI.AUSTIN.TX.US/ROWMAN FOR RIGHT OF WAY EXCAVATION PERMIT SUBMITTAL FOR ANY EXCAVATION IN COA RIGHT OF WAY.
3. COORDINATION WITH THE OFFICE OF SPECIAL EVENTS, PUBLIC WORKS DEPARTMENT, AND ANY OTHER PROJECTS IDENTIFIED AS A CONFLICT AT THE TIME OF PERMITTING

CITY OF AUSTIN TRAFFIC SIGNALS NOTES:

1. EXISTING TRAFFIC SIGNAL LOOP DETECTORS DAMAGED BY CONSTRUCTION TO BE REPLACED PER CITY STANDARDS.

AUSTIN ENERGY NOTES:

1. AUSTIN ENERGY HAS THE RIGHT TO PRUNE AND/OR REMOVE TREES, SHRUBBERY AND OTHER OBSTRUCTIONS TO THE EXTENT NECESSARY TO KEEP THE EASEMENT CLEAR. AUSTIN ENERGY WILL PERFORM ALL TREE WORK IN COMPLIANCE WITH CHAPTER 25-8, SUBCHAPTER B OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.
2. THE OWNER/DEVELOPER OF THIS SUBDIVISION/LOT SHALL PROVIDE AUSTIN ENERGY WITH ANY EASEMENT AND/OR ACCESS REQUIRED, IN ADDITION TO THOSE INDICATED, FOR THE INSTALLATION AND ONGOING MAINTENANCE OF OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES. THESE EASEMENTS AND/OR ACCESS ARE REQUIRED TO PROVIDE ELECTRIC SERVICE TO THE BUILDING AND WILL NOT BE LOCATED SO AS TO CAUSE THE SITE TO BE OUT OF COMPLIANCE WITH CHAPTER 25-8 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.
3. THE OWNER SHALL BE RESPONSIBLE FOR INSTALLATION OF TEMPORARY EROSION CONTROL, REVEGETATION AND TREE PROTECTION. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR ANY INITIAL TREE PRUNING AND TREE REMOVAL THAT IS WITHIN TEN FEET OF THE CENTER LINE OF THE PROPOSED OVERHEAD ELECTRICAL FACILITIES DESIGNED TO PROVIDE ELECTRIC SERVICE TO THIS PROJECT. THE OWNER SHALL INCLUDE AUSTIN ENERGY'S WORK WITHIN THE LIMITS OF CONSTRUCTION FOR THIS PROJECT.
4. THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCE WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. AUSTIN ENERGY WILL NOT RENDER ELECTRIC SERVICE UNLESS REQUIRED CLEARANCES WILL BE CHARGED TO THE OWNER.

UTILITY FACILITIES NOTE

WARNING: HIGH-PRESSURE GAS PIPELINES! EXCAVATION AND/OR CONSTRUCTION WITHIN 25 FEET OF THE PIPELINE REQUIRES PROPER PERMISSION OF THE AFFECTED GAS PIPELINE COMPANY.

GAS PIPELINE COMPANIES INVOLVED WITH THIS PROJECT INCLUDE THE FOLLOWING:

ATMOS ENERGY-	DARWIN ZRUBEK	512-484-7753
ENTERPRISE PRODUCTS-	CHARLIE ROGERS	210-260-7913
TEXAS GAS-	CHRIS LANDGRAF	512-465-1131
AUSTIN ENERGY-	DON PLEASANT	512-505-7233

CONTRACTOR SHALL COORDINATE WITH ALL UTILITY PURVEYORS AND PIPELINE OPERATORS. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT CONSTRUCTION PROCEDURES FOLLOW EACH UTILITIES' NOTIFICATION AND ENCROACHMENT REQUIREMENTS.

SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

ENTERPRISE PRODUCTS ENCROACHMENT APPROVAL NOTES (2012-07-03)

ENCROACHMENT ACROSS THE EAST AUSTIN LOOP PIPELINE
(SOUTH TEXAS-TX150; LID #19; TRACT#7H; DB #5163)

1. A MINIMUM OF 48 HOURS (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES RELATING TO THE ENCROACHMENT WITHIN TWENTY-FIVE FEET (25') OF COMPANY'S PIPELINE, AUSTIN SHALL NOTIFY, OR SHALL REQUIRE AND BE RESPONSIBLE FOR ITS CONTRACTORS, AGENTS, AND SUBCONTRACTORS TO NOTIFY LOCAL ONE-CALL BY DIALING 811, AS WELL AS COMPANY'S OPERATIONS REPRESENTATIVE GARY STUMP AT (210) 260-4609, SO THAT MR. STUMP OR HIS DESIGNATED REPRESENTATIVE CAN BE PRESENT DURING ANY APPROVED CONSTRUCTION OPERATIONS. THE FOLLOWING LANGUAGE MUST BE CONSPICUOUSLY DISPLAYED ON ALL DRAWINGS DEPICTING THE PIPELINE:

   WARNING! HIGH PRESSURE PIPELINE
   EXCAVATION AND/OR CONSTRUCTION PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION FROM ENTERPRISE PRODUCTS OPERATING, LLC
2. AUSTIN'S CROSSING(S) WILL BE AS CLOSE TO NINETY (90) DEGREES AS POSSIBLE TO COMPANY'S PIPELINE, BUT NOT LESS THAN FORTY-FIVE (45) DEGREES. COMPANY WILL REQUIRE PHYSICAL VERIFICATION OF PIPELINE LOCATION PRIOR TO COMMENCEMENT OF ANY WORK BY TRENCHLESS CONSTRUCTION. AUSTIN WILL PROVIDE AN ADEQUATE VIEWING WINDOW WHEN INSTALLING THE AFOREMENTIONED WATER LINE VIA TRENCHLESS CONSTRUCTION, IN COORDINATION WITH AND AT THE DISCRETION OF COMPANY'S REPRESENTATIVE OR DESIGNEE.
3. AUSTIN WILL INSTALL THE AFOREMENTIONED WATER LINE ACROSS AND UNDER COMPANY'S PIPELINE IN SUCH A WAY THAT A MINIMUM VERTICAL SEPARATION OF THIRTY-SIX INCHES (36") BETWEEN THE BOTTOM OF COMPANY'S PIPELINE AND THE TOP OF AUSTIN'S WATER LINE CASING IS MAINTAINED.
4. AUSTIN WILL NOT MOVE CONSTRUCTION EQUIPMENT ACROSS COMPANY'S PIPELINE AND/OR RIGHTS-OF-WAY WITHOUT THE CONSENT OF COMPANY'S REPRESENTATIVE. WHEREVER AUSTIN IS APPROVED TO CROSS COMPANY'S PIPELINE AND/OR RIGHTS-OF-WAY WITH HEAVY EQUIPMENT, AUSTIN WILL PLACE MATTING OR OTHER SUITABLE MATERIAL OVER THE PIPELINE AS DETERMINED BY COMPANY'S REPRESENTATIVE IN THE FIELD. NO LARGE VIBRATORY COMPACTION EQUIPMENT IS ALLOWED WITHIN THE COMPANY'S RIGHT-OF-WAY, ONLY WALK-BEHIND VIBRATORY ROLLER/COMPACTOR IS ALLOWED WHEN WORKING OVER COMPANY'S PIPELINE. AUSTIN WILL MAINTAIN A MINIMUM OF FIVE FEET (5') OF COVER OVER THE TOP OF THE COMPANY'S PIPELINE AT LOCATIONS WHERE CONSTRUCTION OR MAINTENANCE ACTIVITIES WILL TAKE PLACE OVER THE PIPELINE.
5. METALLIC PIPE CROSSING COMPANY'S PIPELINE WILL BE SUBJECT TO A CATHODIC PROTECTION INTERFERENCE STUDY. SHOULD REMEDIATION BE NECESSARY, COMPANY WILL REQUIRE FULL COOPERATION TO ENSURE THAT THE CATHODIC PROTECTION SYSTEM IS OPERATING PROPERLY. IF INTERFERENCE IS DETECTED, THE ENCROACHING PARTY SHALL WORK DILIGENTLY TOWARDS REMEDIATION. FOREIGN METALLIC PIPE CROSSINGS SHALL BE COATED WITH A NON-CONDUCTIVE COATING FOR THE FULL WIDTH OF COMPANY'S RIGHT-OF-WAY.
6. AUSTIN MAY PLACE EXCAVATED MATERIAL INSIDE COMPANY'S RIGHTS-OF-WAY, BUT MAY NOT PLACE SUCH MATERIAL OVER COMPANY'S PIPELINE UNLESS APPROVED BY COMPANY'S REPRESENTATIVE. COMPANY WILL REQUIRE A MINIMUM OF 72 HOURS NOTICE PRIOR TO CROSSING COMPANY'S PIPELINE WITH HEAVY EQUIPMENT. NO EQUIPMENT WILL BE ALLOWED TO WORK OVER COMPANY'S PIPELINE UNLESS APPROVED BY COMPANY'S REPRESENTATIVE. COMPANY REQUIRES HAND EXCAVATION TO BE PERFORMED WITHIN EIGHTEEN-INCHES (18") PLUS HALF THE DIAMETER OF COMPANY'S PIPELINE; HOWEVER, AT NO POINT SHOULD MECHANICAL EXCAVATION BE PERFORMED LESS THAN TWO FEET (2') FROM COMPANY'S PIPELINE. ALL MECHANICAL DIGGING EQUIPMENT MUST HAVE THE TEETH REMOVED OR BARRED WITH A PLATE WELDED ACROSS THE TEETH.
7. AUSTIN WILL NOT PLACE LARGE LANDSCAPING, INCLUDING, BUT NOT LIMITED TO, TREES AND LARGE SHRUBS WITH A MATURE UNTRIMMED HEIGHT GREATER THAN EIGHTEEN INCHES (18") ON COMPANY'S RIGHTS-OF-WAY. NO LIGHT OR UTILITY POLES, FENCES, BUILDINGS, HOUSES, BARNS, GARAGES, PATIOS, SWIMMING POOLS, REINFORCED CONCRETE SLABS, OR OTHER PERMANENT STRUCTURES WILL BE PERMITTED ON COMPANY'S RIGHTS-OF-WAY.
8. ANY AND ALL USE OF COMPANY'S RIGHTS-OF-WAY FOR TEMPORARY WORKSPACE AND ANY AND ALL CROSSINGS OF THE SUBJECT PIPELINE MUST BE APPROVED BY COMPANY'S REPRESENTATIVE IN THE FIELD, PROVIDED, HOWEVER, THAT SUCH APPROVAL SHALL NOT BE UNREASONABLY WITHHELD. AUSTIN AGREES TO CLEAN UP AND REPAIR ALL DAMAGES TO COMPANY'S RIGHTS-OF-WAY RESULTING FROM THE WORK ON OR ACROSS COMPANY'S RIGHTS-OF-WAY. ANY AND ALL DAMAGE REPAIRS AND CLEANUP OF COMPANY'S RIGHTS-OF-WAY WILL BE SUBJECT TO COMPANY'S ACCEPTANCE.
9. AUSTIN MAY PLACE AND MAINTAIN UTILITY MARKERS ON EITHER EDGE OF COMPANY'S PIPELINE RIGHTS-OF-WAY UNLESS SAID MARKERS INTERFERE WITH LANDOWNER'S OR TENANT'S LAND USE.
10. WITHIN 120 DAYS OF THE COMPLETION OF THE ENCROACHMENT ACROSS COMPANY'S RIGHTS-OF-WAY, AUSTIN WILL PROVIDE TO COMPANY AT THE ABOVE ADDRESS A REPRODUCIBLE AS-BUILT DRAWING OF THE CROSSING(S), WHICH SHALL INCLUDE A DISTANCE OF TWENTY-FIVE FEET (25') ON EACH SIDE OF SAID CROSSING(S) ALONG WITH DEPICTION OF ELEVATIONS.
11. THE EXISTENCE OF THE ENCROACHMENT DOES NOT CONSTITUTE A WAIVER OF COMPANY'S EXPRESS RIGHTS UNDER THE COMPANY'S GRANT OF EASEMENT OR ANY OTHER RIGHTS WHICH MAY BE IMPLIED BY LAW OR EQUITY.

ENCROACHMENT ACROSS THE AUSTIN/LONE STAR DECKER CREEK INTERCONNECT PIPELINE
(SOUTH TEXAS-TX150; LID #19A-2; TRACT #1, 1H, 1HA, 1HB; DB #5163)

1. A MINIMUM OF 48 HOURS (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES RELATING TO THE ENCROACHMENT WITHIN TWENTY-FIVE FEET (25') OF COMPANY'S PIPELINE, AUSTIN SHALL NOTIFY, OR SHALL REQUIRE AND BE RESPONSIBLE FOR ITS CONTRACTORS, AGENTS, AND SUBCONTRACTORS TO NOTIFY LOCAL ONE-CALL BY DIALING 811, AS WELL AS COMPANY'S OPERATIONS REPRESENTATIVE GARY STUMP AT (210) 260-4609, SO THAT MR. STUMP OR HIS DESIGNATED REPRESENTATIVE CAN BE PRESENT DURING ANY APPROVED CONSTRUCTION OPERATIONS. THE FOLLOWING LANGUAGE MUST BE CONSPICUOUSLY DISPLAYED ON ALL DRAWINGS DEPICTING THE PIPELINE:

   WARNING!HIGH PRESSURE PIPELINE
   EXCAVATION AND/OR CONSTRUCTION PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION FROM ENTERPRISE PRODUCTS OPERATING, LLC
2. AUSTIN'S CROSSING(S) WILL BE AS CLOSE TO NINETY (90) DEGREES AS POSSIBLE TO COMPANY'S PIPELINE, BUT NOT LESS THAN FORTY-FIVE (45) DEGREES. COMPANY WILL REQUIRE PHYSICAL VERIFICATION OF PIPELINE LOCATION PRIOR TO COMMENCEMENT OF ANY WORK BY TRENCHLESS CONSTRUCTION. AUSTIN WILL PROVIDE AN ADEQUATE VIEWING WINDOW WHEN INSTALLING THE AFOREMENTIONED WATER LINE VIA TRENCHLESS CONSTRUCTION, IN COORDINATION WITH AND AT THE DISCRETION OF COMPANY'S REPRESENTATIVE OR DESIGNEE.
3. AUSTIN WILL INSTALL THE AFOREMENTIONED WATER LINE ACROSS AND UNDER COMPANY'S PIPELINE, STATIONING APPROXIMATELY 0+67(+/-), IN SUCH A WAY THAT A MINIMUM VERTICAL SEPARATION OF THIRTY-SIX INCHES (36") BETWEEN THE BOTTOM OF COMPANY'S PIPELINE AND THE TOP OF AUSTIN'S WATER LINE CASING IS MAINTAINED. AUSTIN WILL PARALLEL COMPANY'S PIPELINE, STATIONING APPROXIMATELY 0+00(+/-) TO 107+31(+/-), IN SUCH A WAY THAT A MINIMUM HORIZONTAL SEPARATION OF TEN-FEET (10') FROM OUTSIDE TO OUTSIDE OF PIPELINE WALL. AVOID PLACING UTILITY SPOILS OR OPERATING HEAVY CONSTRUCTION EQUIPMENT WITHIN FIVE-FEET (5') FROM PIPELINE.
4. AUSTIN WILL NOT MOVE CONSTRUCTION EQUIPMENT ACROSS COMPANY'S PIPELINE AND/OR RIGHTS-OF-WAY WITHOUT THE CONSENT OF COMPANY'S REPRESENTATIVE. WHEREVER AUSTIN IS APPROVED TO CROSS COMPANY'S PIPELINE AND/OR RIGHTS-OF-WAY WITH HEAVY EQUIPMENT, AUSTIN WILL PLACE MATTING OR OTHER SUITABLE MATERIAL OVER THE PIPELINE AS DETERMINED BY COMPANY'S REPRESENTATIVE IN THE FIELD. NO LARGE VIBRATORY COMPACTION EQUIPMENT IS ALLOWED WITHIN THE COMPANY'S RIGHT-OF-WAY, ONLY WALK-BEHIND VIBRATORY ROLLER/COMPACTOR IS ALLOWED WHEN WORKING OVER COMPANY'S PIPELINE. AUSTIN WILL MAINTAIN A MINIMUM OF FIVE FEET (5') OF COVER OVER THE TOP OF THE COMPANY'S PIPELINE AT LOCATIONS WHERE CONSTRUCTION OR MAINTENANCE ACTIVITIES WILL TAKE PLACE OVER THE PIPELINE.
5. METALLIC PIPE CROSSING COMPANY'S PIPELINE WILL BE SUBJECT TO A CATHODIC PROTECTION INTERFERENCE STUDY. SHOULD REMEDIATION BE NECESSARY, COMPANY WILL REQUIRE FULL COOPERATION TO ENSURE THAT THE CATHODIC PROTECTION SYSTEM IS OPERATING PROPERLY. IF INTERFERENCE IS DETECTED, THE ENCROACHING PARTY SHALL WORK DILIGENTLY TOWARDS REMEDIATION. FOREIGN METALLIC PIPE CROSSINGS SHALL BE COATED WITH A NON-CONDUCTIVE COATING FOR THE FULL WIDTH OF COMPANY'S RIGHT-OF-WAY.
6. AUSTIN MAY PLACE EXCAVATED MATERIAL INSIDE COMPANY'S RIGHTS-OF-WAY, BUT MAY NOT PLACE SUCH MATERIALOVER COMPANY'S PIPELINE UNLESS APPROVED BY COMPANY'S REPRESENTATIVE. COMPANY WILL REQUIRE A MINIMUM OF 72 HOURS NOTICE PRIOR TO CROSSING COMPANY'S PIPELINE WITH HEAVY EQUIPMENT. NO EQUIPMENT WILL BE ALLOWED TO WORK OVER COMPANY'S PIPELINE UNLESS APPROVED BY COMPANY'S REPRESENTATIVE. COMPANY REQUIRES HAND EXCAVATION TO BE PERFORMED WITHIN EIGHTEEN-INCHES (18") PLUS HALF THE DIAMETER OF COMPANY'S PIPELINE; HOWEVER, AT NO POINT SHOULD MECHANICAL EXCAVATION BE PERFORMED LESS THAN TWO FEET (2') FROM COMPANY'S PIPELINE. ALL MECHANICAL DIGGING EQUIPMENT MUST HAVE THE TEETH REMOVED OR BARRED WITH A PLATE WELDED ACROSS THE TEETH.
7. AUSTIN WILL NOT PLACE LARGE LANDSCAPING, INCLUDING, BUT NOT LIMITED TO, TREES AND LARGE SHRUBS WITH A MATURE UNTRIMMED HEIGHT GREATER THAN EIGHTEEN INCHES (18") ON COMPANY'S RIGHTS-OF-WAY. NO LIGHT OR UTILITY POLES, FENCES, BUILDINGS, HOUSES, BARNS, GARAGES, PATIOS, SWIMMING POOLS, REINFORCED CONCRETE SLABS, OR OTHER PERMANENT STRUCTURES WL BE PERMITTED ON COMPANY'S RIGHTS-OF-WAY.
8. ANY AND ALL USE OF COMPANY'S RIGHTS-OF-WAY FOR TEMPORARY WORKSPACE AND ANY AND ALL CROSSINGS OF THE SUBJECT PIPELINE MUST BE APPROVED BY COMPANY'S REPRESENTATIVE IN THE FIELD, PROVIDED, HOWEVER, THAT SUCH APPROVAL SHALL NOT BE UNREASONABLY WITHHELD. AUSTIN AGREES TO CLEAN UP AND REPAIR ALL DAMAGES TO COMPANY'S RIGHTS-OF-WAY RESULTING FROM THE WORK ON OR ACROSS COMPANY'S RIGHTS-OF-WAY. ANY AND ALL DAMAGE REPAIRS AND CLEANUP OF COMPANY'S RIGHTS-OF-WAY WILL BE SUBJECT TO COMPANY'S ACCEPTANCE.
9. AUSTIN MAY PLACE AND MAINTAIN UTILITY MARKERS ON EITHER EDGE OF COMPANY'S PIPELINE RIGHTS-OF-WAY UNLESS SAID MARKERS INTERFERE WITH LANDOWNER'S OR TENANT'S LAND USE.
10. WITHIN 120 DAYS OF THE COMPLETION OF THE ENCROACHMENT ACROSS COMPANY'S RIGHTS-OF-WAY, AUSTIN WILL PROVIDE TO COMPANY AT THE ABOVE ADDRESS A REPRODUCIBLE AS-BUILT DRAWING OF THE CROSSING(S), WHICH SHALL INCLUDE A DISTANCE OF TWENTY-FIVE FEET (25') ON EACH SIDE OF SAID CROSSING(S) ALONG WITH DEPICTION OF ELEVATIONS.
11. THE EXISTENCE OF THE ENCROACHMENT DOES NOT CONSTITUTE A WAIVER OF COMPANY'S EXPRESS RIGHTS UNDER THE COMPANY'S GRANT OF EASEMENT OR ANY OTHER RIGHTS WHICH MAY BE IMPLIED BY LAW OR EQUITY.

ATMOS ENERGY ENCROACHMENT NOTES (2012-08-03)

GENERAL NOTES
LINE P

- AN ATMOS ENERGY REPRESENTATIVE MUST BE PRESENT DURING ANY AND ALL WORK WITHIN ATMOS ENERGY'S EASEMENT. ATMOS ENERGY REPRESENTATIVE DARWIN ZRUBEK (512-310-3854) MUST BE NOTIFIED AT LEAST THREE (3) DAYS (72 HOURS) IN ADVANCE OF ANY ACTIVITIES WITHIN THE VICINITY OF ATMOS ENERGY FACILITIES TO AVOID ANY DELAYS IN FIELD ACTIVITIES.
- EXCAVATION (AND/OR COMPACTION) CLOSER THAN THREE (3) FEET HORIZONTALLY FROM ATMOS ENERGY'S FACILITIES MUST BE DONE BY HAND.
- ATMOS ENERGY'S FACILITIES MUST BE EXPOSED AND THE ELEVATIONS FIELD VERIFIED PRIOR TO ANY CONSTRUCTION ACTIVITY TO ENSURE THAT THEY WERE REPRESENTED ACCURATELY IN THE DRAWING PACKAGE. IN THE EVENT ATMOS ENERGY'S FACILITIES WERE FALSELY REPRESENTED IN THE DRAWINGS, CONSTRUCTION WILL NOT BE ALLOWED TO CONTINUE WITHOUT A REDESIGN OF THE PROJECT BEING SUBMITTED AND AN EVALUATION BY ATMOS ENERGY.
- ATMOS ENERGY'S EASEMENT WILL BE PROTECTED FROM WASHING AND EROSION DURING CONSTRUCTION AND/OR REPAIRS.
- POSITIVE DRAINAGE MUST BE MAINTAINED WITHIN ATMOS ENERGY'S EASEMENT. IF FILL IS REQUIRED TO PRODUCE POSITIVE DRAINAGE A REQUEST MUST BE MADE FOR THE AMOUNT OF FILL TO PLACE WITHIN THE EASEMENT.
- EQUIPMENT, MATERIALS, OR EXCESS DIRT WILL NOT BE STORED ON THE EASEMENT DURING CONSTRUCTION WITHOUT THE PRIOR WRITTEN APPROVAL OF ATMOS ENERGY.
- ATMOS ENERGY WILL NOT BE RESPONSIBLE FOR DAMAGE TO ANY ALLOWED ENCROACHMENTS.
- ATMOS ENERGY RESERVES THE RIGHT FOR FUTURE USES OF THIS EASEMENT, INCLUDING BUT NOT LIMITED TO, INGRESS AND EGRESS, RECONSTRUCTING, REMOVING, RELOCATING, MAINTAINING, OPERATING, ETC., OF ANY OF ITS FACILITIES.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 3 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	APPROVAL

REVISION

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel: (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323.D.
LICENSED
PROFESSIONAL ENGINEER
5/6/16

GENERAL NOTES

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT | DESIGNED BY: AJS | REVIEWED BY: SB | PROJECT NO.: R010696010026

SHEET 3 OF 45

G:\106960\10026\CD_DWG\106960026CNS02.dwg modified by jthompson on Jan 21, 16 10:39 AM

SP-2015-0337D

CITY OF AUSTIN EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).

2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE COA ESC PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE-CONSTRUCTION MEETING. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY COA EV PLAN REVIEWERS AS WELL AS COA EV INSPECTORS.

3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.

4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT, 974-2278, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.

5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ABORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.

6. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR WITH EITHER A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), CERTIFIED EROSION, SEDIMENT AND STORMWATER-INSPECTOR (CESSW) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.

7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.

8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.

9. TEMPORARY & PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW.

   A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES. THE TOPSOIL SHALL BE COMPOSED OF 4 PARTS OF SOIL MIXED WITH 1 PART COMPOST, BY VOLUME. THE COMPOST SHALL MEET THE DEFINITION OF COMPOST AS DEFINED BY TXDOT SPECIFICATION ITEM 161. THE SOIL SHALL BE LOCALLY AVAILABLE NATIVE SOIL THAT MEETS THE FOLLOWING SPECIFICATIONS:

   - SHALL BE FREE OF TRASH, WEEDS, DELETERIOUS MATERIALS, ROCKS, AND DEBRIS.
   - 100% SHALL PASS THROUGH A 1.5-INCH (38-MM) SCREEN.
   - SOIL TO BE A LOAMY MATERIAL THAT MEETS THE REQUIREMENTS OF THE TABLE BELOW IN ACCORDANCE WITH THE USDA TEXTURAL TRIANGLE. SOIL KNOWN LOCALLY AS CRED DEATH SOIS NOT AN ALLOWABLE SOIL. TEXTURAL COMPOSITION SHALL MEET THE FOLLOWING CRITERIA:

TEXTURAL CLASS	MINIMUM	MAXIMUM
CLAY	5%	50%
SILT	10%	50%
SAND	15%	67%

   - AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE SOIL TEXTURE CLASS REQUIRED ABOVE BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.
   - SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL-BLENDED MATERIAL.

TOPSOIL SALVAGED FROM THE EXISTING SITE MAY OFTEN BE USED, BUT IT SHOULD MEET THE SAME STANDARDS AS SET FORTH IN THESE STANDARDS.

THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS:

TEMPORARY VEGETATIVE STABILIZATION:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH COOL SEASON COVER CROPS (WHEAT AT 0.5 POUNDS PER 1000 SF, OATS AT 0.5 POUNDS PER 1000 SF, CEREAL RYE GRAIN AT 0.5 POUNDS PER 1000 SF) WITH A TOTAL RATE OF 1.5 POUNDS PER 1000 SF. COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.

2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUNDS PER 1000 SF.

   A. FERTILIZER SHALL BE WATER SOLUBLE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.

   B. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.

   C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1 1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.

   D. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	APPLICATIONS	RATES
100% OR ANY BLEND OF WOOD, CELLULOSE, STRAW, AND/OR COTTON PLANT MATERIAL (EXCEPT NO MULCH SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0-3 MONTHS	MODERATE SLOPES: FROM FLAT TO 3:1	1500 TO 2000 LBS PER ACRE

PERMANENT VEGETATIVE STABILIZATION:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOWED TO A HEIGHT OF LESS THAN ONE-HALF (1/2) INCH AND THE AREA SHALL BE RE-SEEDED IN ACCORDANCE WITH 2. BELOW.

2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1000 SF WITH A PURITY OF 95% WITH 85% GERMINATION. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL.

   A. FERTILIZER SHALL BE A WATER SOLUBLE WITH AN ANALYSIS OF 15-15-15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.

   B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.

   C. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX INCHES. THE IRRIGATION SHALL OCCUR AT DAILY INTERVALS (MINIMUM) DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF ½ INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.

   D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.

   E. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS 10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2,500 TO 4,000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)
FIBER REINFORCED MATRIX (FRM)	65% ORGANIC DEFIBRATED FIBERS 25% REINFORCING FIBERS OR LESS 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND EROSIVE SOIL CONDITIONS	3,000 TO 4,000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)

CONSTRUCTION SEQUENCE SCHEDULE

1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE APPROVED UTILITY PLAN IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION AND INITIATE TREE MITIGATION MEASURES.
2. THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR MUST CONTACT THE WATERSHED PROTECTION DEPARTMENT, ENVIRONMENTAL INSPECTION, AT (512) 974-2278, 72 HOURS PRIOR TO SCHEDULED DATE OF THE REQUIRED ON-SITE PRECONSTRUCTION MEETING.
3. CALL DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION, (512) 974-0170 X7161, 48 HOURS PRIOR TO BEGINNING ANY WORK.
4. THE ENVIRONMENTAL PROJECT MANAGER AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE STORM WATER POLLUTION PLAN (SWPPP) POSTED ON THE SITE. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REVISED, IF NEEDED, TO COMPLY WITH CITY INSPECTORS' DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN.
5. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE.
6. DELIVER WATER MAIN CUT SHEETS TO THE CONSTRUCTION INSPECTION DIVISION OF DPW.
7. PERFORM EXPLORATORY EXCAVATION TO VERIFY ELEVATIONS AND LOCATIONS OF ALL UTILITIES TO BE CROSSED OR CONNECTED TO. EROSION CONTROLS SHALL BE REVISED, IF NEEDED TO COMPLY WITH INSPECTOR'S DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN.
8. BEGIN CONSTRUCTION OF WATER MAIN, PLACING EXCAVATED MATERIAL ON HIGH SIDE OF TRENCH. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREA AS POSSIBLE. PARTICULARLY CHANNELS AND LARGE OPEN AREAS.
9. COMPLETE CONNECTION TO EXISTING WATER LINE.
10. CONSTRUCT ASPHALT PAVING AND CONCRETE RESTORATION.
11. COMPLETE CONSTRUCTION AND TESTING OF WATER MAIN AND START REVEGETATION OF THE SITE.
12. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE TO THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT AND THE DEPARTMENT OF PUBLIC WORKS INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION, IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
13. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE CITY INSPECTOR AND WITH APPROVAL FROM THE CITY INSPECTOR, REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS. CONDUCT ANY MAINTENANCE AND CLEANING OF EXISTING DRAINAGE STRUCTURES.

ECM APPENDIX P-2: – CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION

1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION WITH TEMPORARY FENCING.
2. PROTECTIVE FENCES SHALL BE ERECTED ACCORDING TO CITY OF AUSTIN STANDARDS FOR TREE PROTECTION.
3. PROTECTIVE FENCES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING), AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
4. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
5. PROTECTIVE FENCES SHALL SURROUND THE TREES OR GROUP OF TREES, AND WILL BE LOCATED AT THE OUTERMOST LIMIT OF BRANCHES (DRIP LINE) , FOR NATURAL AREAS, PROTECTIVE FENCES SHALL FOLLOW THE LIMIT OF CONSTRUCTION LINE, IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS;
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 6 INCHES CUT OR FILL), OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY ABORIST;
   C. WOUNDS TO EXPOSED ROOTS, TRUNK OR LIMBS BY MECHANICAL EQUIPMENT;
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING, AND FIRES.
6. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIP LINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT, ERECT THE FENCE APPROXIMATELY 2 TO 4 FEET BEYOND THE AREA DISTURBED;
   B. WHERE PERMEABLE PAVING IS TO BE INSTALLED WITHIN A TREE'S DRIP LINE, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA (PRIOR TO SITE GRADING SO THAT THIS AREA IS GRADED SEPARATELY PRIOR TO PAVING INSTALLATION TO MINIMIZED ROOT DAMAGE);
   C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE TO ALLOW 6 TO 10 FEET OF WORK SPACE BETWEEN THE FENCE AND THE BUILDING;
   D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY ARBORIST AT 974-1876 TO DISCUSS ALTERNATIVES.

   SPECIAL NOTE: FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED.
7. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FT (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
8. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
9. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
10. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
11. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 4 INCHES SHALL BE PERMITTED WITHIN THE DRIP LINE OF TREES. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
12. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.).
13. ALL FINISHED PRUNING SHALL BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES AVAILABLE ON REQUEST FROM THE CITY ARBORIST).
14. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NON-COMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.

ECM APPENDIX P-4: – STANDARD SEQUENCE OF CONSTRUCTION

THE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE USED FOR ALL DEVELOPMENT. THE APPLICANT IS ENCOURAGED TO PROVIDE ANY ADDITIONAL DETAILS APPROPRIATE FOR THE PARTICULAR DEVELOPMENT.

1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE APPROVED SITE PLAN OR SUBDIVISION CONSTRUCTION PLAN AND IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION AND INITIATE TREE MITIGATION MEASURES.
2. THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR MUST CONTACT THE WATERSHED PROTECTION DEPARTMENT, ENVIRONMENTAL INSPECTION, AT 512-974-2278, 72 HOURS PRIOR TO THE SCHEDULED DATE OF THE REQUIRED ON-SITE PRECONSTRUCTION MEETING.
3. THE ENVIRONMENTAL PROJECT MANAGER, AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REVISED, IF NEEDED, TO COMPLY WITH CITY INSPECTORS' DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN.
4. ROUGH GRADE THE POND(S) AT 100% PROPOSED CAPACITY. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A SUMP PIT OUTLET AND AN EMERGENCY SPILLWAY MEETING THE REQUIREMENTS OF THE DRAINAGE CRITERIA MANUAL AND/OR THE ENVIRONMENTAL CRITERIA MANUAL, AS REQUIRED. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL INSTALLATION OF THE PERMANENT WATER QUALITY POND(S).
5. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE.
6. BEGIN SITE CLEARING/CONSTRUCTION (OR DEMOLITION) ACTIVITIES.
7. IN THE BARTON SPRINGS ZONE, THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR WILL SCHEDULE A MID-CONSTRUCTION CONFERENCE TO COORDINATE CHANGES IN THE CONSTRUCTION SCHEDULE AND EVALUATE EFFECTIVENESS OF THE EROSION CONTROL PLAN AFTER POSSIBLE CONSTRUCTION ALTERATIONS TO THE SITE. PARTICIPANTS SHALL INCLUDE THE CITY INSPECTOR, PROJECT ENGINEER, GENERAL CONTRACTOR AND ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR. THE ANTICIPATED COMPLETION DATE AND FINAL CONSTRUCTION SEQUENCE AND INSPECTION SCHEDULE WILL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR.
8. PERMANENT WATER QUALITY PONDS OR CONTROLS WILL BE CLEANED OUT AND FILTER MEDIA WILL BE INSTALLED PRIOR TO/CONCURRENTLY WITH REVEGETATION OF SITE.
9. COMPLETE CONSTRUCTION AND START REVEGETATION OF THE SITE AND INSTALLATION OF LANDSCAPING.
10. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE TO THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION, IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
11. UPON COMPLETION OF LANDSCAPE INSTALLATION OF A PROJECT SITE, THE LANDSCAPE ARCHITECT SHALL SUBMIT A LETTER OF CONCURRENCE TO THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT INDICATING THAT THE REQUIRED LANDSCAPING IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
12. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE CITY INSPECTOR AND WITH APPROVAL FROM THE CITY INSPECTOR, REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS. CONDUCT ANY MAINTENANCE AND REHABILITATION OF THE WATER QUALITY PONDS OR CONTROLS.

ECM APPENDIX P-6 – REMEDIAL TREE CARE NOTES AERATION AND SUPPLEMENTAL NUTRIENT REQUIREMENTS FOR TREES WITHIN CONSTRUCTION AREAS

AS A COMPONENT OF AN EFFECTIVE REMEDIAL TREE CARE PROGRAM PER ENVIRONMENTAL CRITERIA MANUAL SECTION 3.5.6, PRESERVED TREES WITHIN THE LIMITS OF CONSTRUCTION MAY REQUIRE SOIL AERATION AND SUPPLEMENTAL NUTRIENTS. SOIL AND/OR FOLIAR ANALYSIS SHOULD BE USED TO DETERMINE THE NEED FOR SUPPLEMENTAL NUTRIENTS. THE CITY ARBORIST MAY REQUIRE THESE ANALYSES AS PART OF A COMPREHENSIVE TREE CARE PLAN. SOIL PH SHALL BE CONSIDERED WHEN DETERMINING THE FERTILIZATION COMPOSITION AS SOIL PH INFLUENCES THE TREE'S ABILITY TO UPTAKE NUTRIENTS FROM THE SOIL. IF ANALYSES INDICATE THE NEED FOR SUPPLEMENTAL NUTRIENTS, THEN HUMATE/NUTRIENT SOLUTIONS WITH MYCORRHIZAE COMPONENTS ARE HIGHLY RECOMMENDED. IN ADDITION, SOIL ANALYSIS MAY BE NEEDED TO DETERMINE IF ORGANIC MATERIAL OR BENEFICIAL MICROORGANISMS ARE NEEDED TO IMPROVE SOIL HEALTH. MATERIALS AND METHODS ARE TO BE APPROVED BY THE CITY ARBORIST (512-974-1876) PRIOR TO APPLICATION. THE OWNER OR GENERAL CONTRACTOR SHALL SELECT A FERTILIZATION CONTRACTOR AND ENSURE COORDINATION WITH THE CITY ARBORIST.

PRE-CONSTRUCTION TREATMENT SHOULD BE APPLIED IN THE APPROPRIATE SEASON, IDEALLY THE SEASON PRECEDING THE PROPOSED CONSTRUCTION. MINIMALLY, AREAS TO BE TREATED INCLUDE THE ENTIRE CRITICAL ROOT ZONE OF TREES AS DEPICTED ON THE CITY APPROVED PLANS. TREATMENT SHOULD INCLUDE, BUT NOT LIMITED TO, FERTILIZATION, SOIL TREATMENT, MULCHING, AND PROPER PRUNING.

POST-CONSTRUCTION TREATMENT SHOULD OCCUR DURING FINAL REVEGETATION OR AS DETERMINED BY A QUALIFIED ARBORIST AFTER CONSTRUCTION. CONSTRUCTION ACTIVITIES OFTEN RESULT IN A REDUCTION IN SOIL MACRO AND MICRO PORES AND AN INCREASE IN SOIL BULK DENSITY. TO AMELIORATE THE DEGRADED SOIL CONDITIONS, AERATION VIA WATER AND/OR AIR INJECTED INTO THE SOIL IS NEEDED OR BY OTHER METHODS AS APPROVED BY THE CITY ARBORIST. THE PROPOSED NUTRIENT MIX SPECIFICATIONS AND SOIL AND/OR FOLIAR ANALYSIS RESULTS NEED TO BE PROVIDED TO AND APPROVED BY THE CITY ARBORIST PRIOR TO APPLICATION (FAX # 512-974-3010). CONSTRUCTION WHICH WILL BE COMPLETED IN LESS THAN 90 DAYS MAY USE MATERIALS AT ½ RECOMMENDED RATES. ALTERNATIVE ORGANIC FERTILIZER MATERIALS ARE ACCEPTABLE WHEN APPROVED BY THE CITY ARBORIST. WITHIN 7 DAYS AFTER FERTILIZATION IS PERFORMED, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE WORK PERFORMED TO THE CITY ARBORIST, PLANNING AND DEVELOPMENT REVIEW DEPARTMENT. P.O. BOX 1088, AUSTIN, TX 78767. THIS NOTE SHOULD BE REFERENCED AS ITEM #1 IN THE SEQUENCE OF CONSTRUCTION.

SPECIAL CONSTRUCTION TECHNIQUES.

IN CONJUNCTION WITH REMEDIAL CARE, MITIGATION FOR TREES REMOVED MAY INCLUDE SPECIAL CONSTRUCTION TECHNIQUES NOT NORMALLY REQUIRED IN STANDARD SPECIFICATIONS. SOME OF THESE TECHNIQUES INCLUDE THE FOLLOWING:

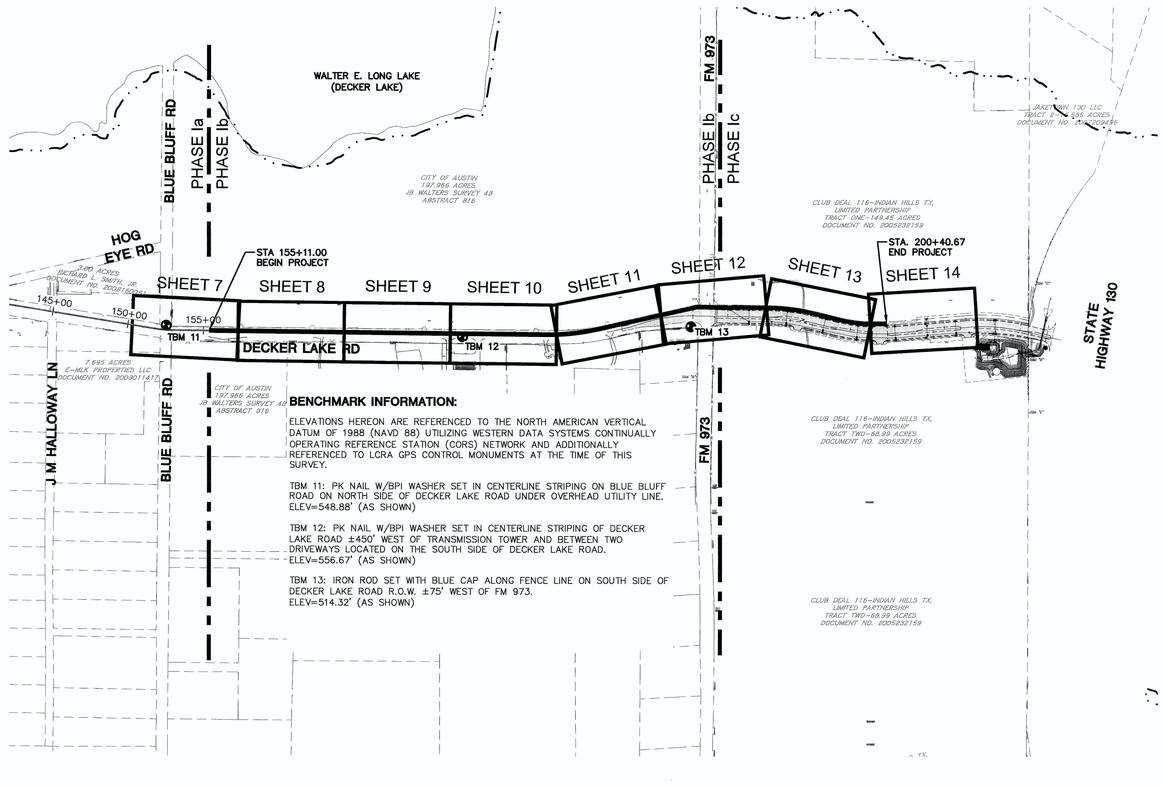
- PRIOR TO EXCAVATION WITHIN TREE DRIPLINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
- IN CRITICAL ROOT ZONE AREAS THAT CANNOT BE PROTECTED DURING CONSTRUCTION WITH FENCING AND WHERE HEAVY VEHICULAR TRAFFIC IS ANTICIPATED, COVER THOSE AREAS WITH A MINIMUM OF 12 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION. IN AREAS WITH HIGH SOIL PLASTICITY GEOTEXTILE FABRIC, PER STANDARD SPECIFICATION 620S, SHOULD BE PLACED UNDER THE MULCH TO PREVENT EXCESSIVE MIXING OF THE SOIL AND MULCH. ADDITIONALLY, MATERIAL SUCH AS PLYWOOD AND METAL SHEETS, COULD BE REQUIRED BY THE CITY ARBORIST TO MINIMIZE ROOT IMPACTS FROM HEAVY EQUIPMENT. ONCE THE PROJECT IS COMPLETED, ALL MATERIALS SHOULD BE REMOVED, AND THE MULCH SHOULD BE REDUCED TO A DEPTH OF 3 INCHES.
- PERFORM ALL GRADING WITHIN CRITICAL ROOT ZONE AREAS BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.
- WATER ALL TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. SPRAY TREE CROWNS WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
- WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 4 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

*FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABL



BENCHMARK INFORMATION:

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) UTILIZING WESTERN DATA SYSTEMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK AND ADDITIONALLY REFERENCED TO LCRA GPS CONTROL MONUMENTS AT THE TIME OF THIS SURVEY.

TBM 11: PK NAIL W/BPI WASHER SET IN CENTERLINE STRIPING ON BLUE BLUFF ROAD ON NORTH SIDE OF DECKER LAKE ROAD UNDER OVERHEAD UTILITY LINE. ELEV=548.88' (AS SHOWN)

TBM 12: PK NAIL W/BPI WASHER SET IN CENTERLINE STRIPING OF DECKER LAKE ROAD ±450' WEST OF TRANSMISSION TOWER AND BETWEEN TWO DRIVEWAYS LOCATED ON THE SOUTH SIDE OF DECKER LAKE ROAD. ELEV=556.67' (AS SHOWN)

TBM 13: IRON ROD SET WITH BLUE CAP ALONG FENCE LINE ON SOUTH SIDE OF DECKER LAKE ROAD R.O.W. ±75' WEST OF FM 973. ELEV=514.32' (AS SHOWN)

500 0 250 500 1000

REVIEWED
JUN 1 9 2016
Austin Water Utility

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 5 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE:_____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/16/16

OVERALL SITE PLAN

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

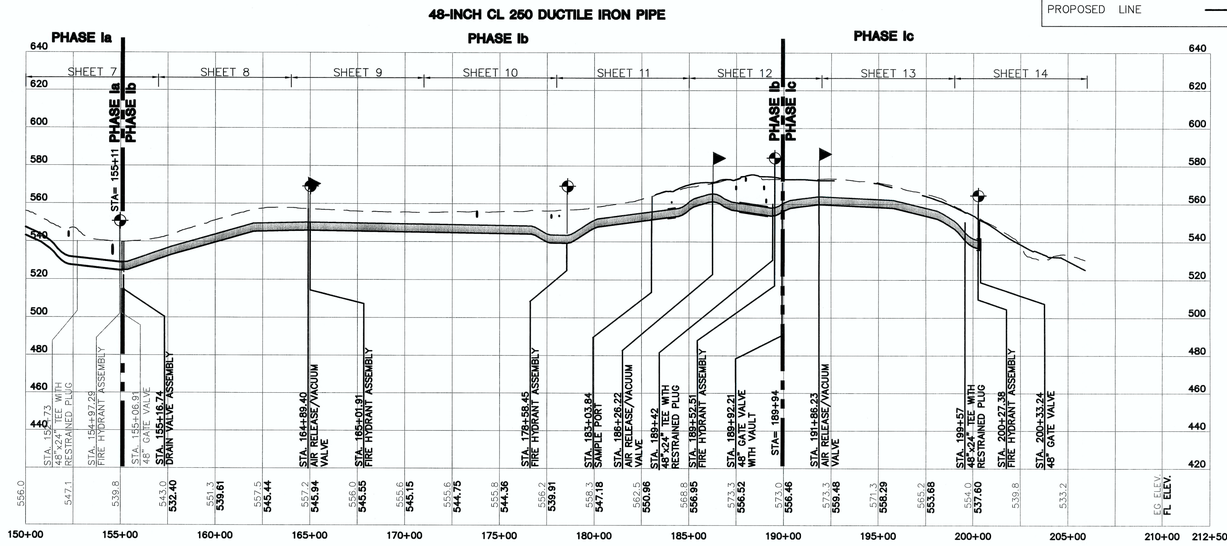
DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 5 OF 45

SP-2015-0337D

G:\106960\10026\CD DWG\106960026SPN01.dwg modified by jthompson on Feb 10, 16 2:02 PM

PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	—— ——	1"= 400' HORIZONTAL
PROPOSED LINE	————	1"= 40' VERTICAL



FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 6 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

REVIEWED
JUN 1 a 2016
Austin Water Utility

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500

Copyright © 2015

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

OVERALL PROFILE

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

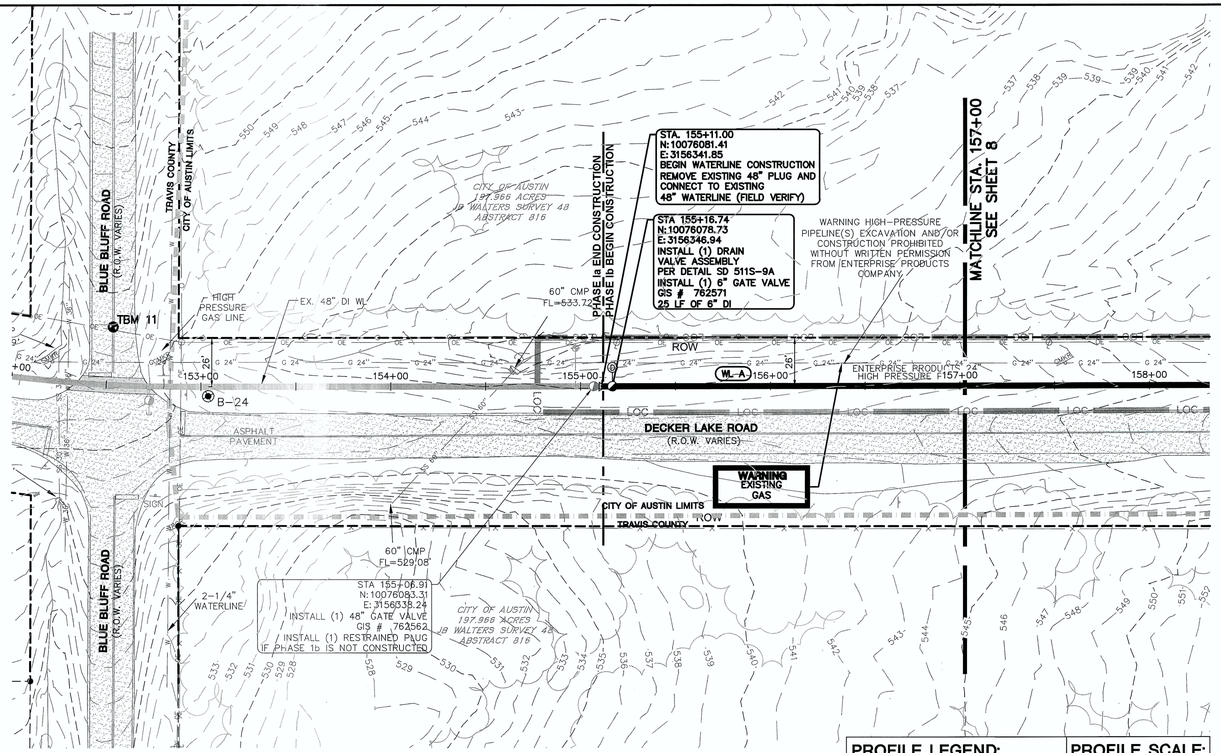
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 6 OF 45

G:\106960\10026\CD DWG\106960026SPN02.dwg modified by jthompson on Oct 21, 15 9:46 AM

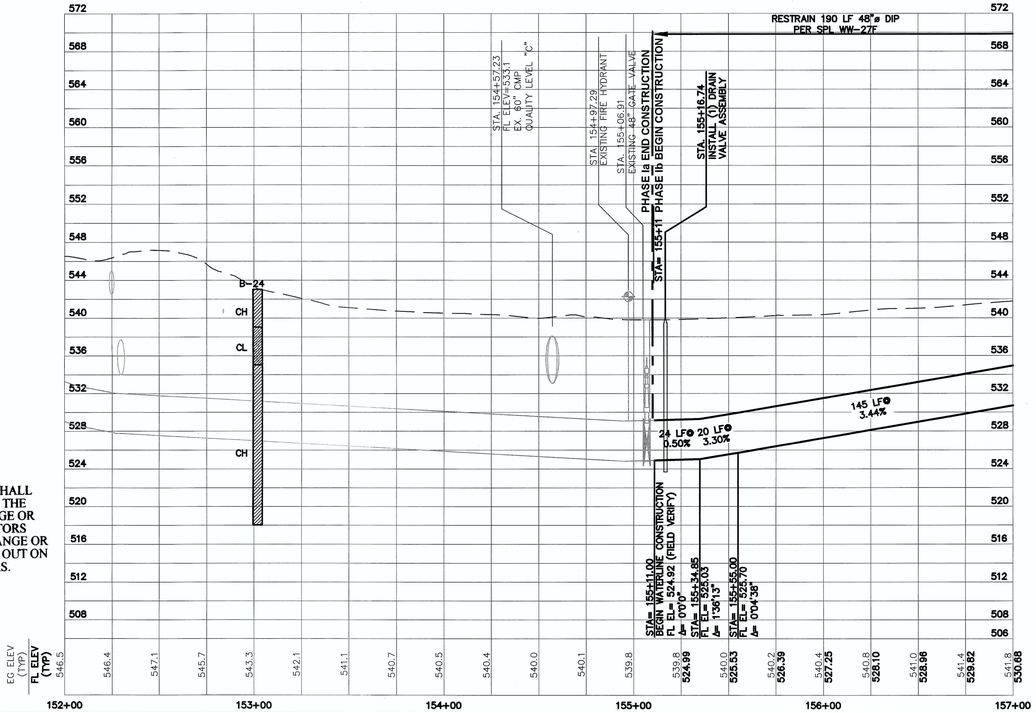
SP-2015-0337D



PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	———	1"= 40' HORIZONTAL
PROPOSED LINE	———	1"= 8' VERTICAL

EXISTING 48-INCH CL. 250 DUCTILE IRON PIPE

48-INCH CL. 250 DUCTILE IRON PIPE



ALL BRANCH CONNECTION SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON PLANS BY DESIGN ENGINEERS.

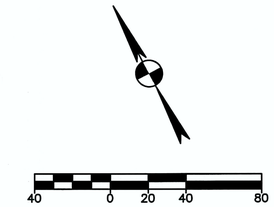
BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	

REVIEWED
JUN 1 8 2016
Austin Water Utility

811
Know what's below.
Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

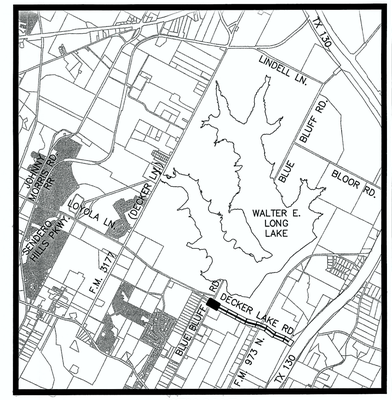


GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 7 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1. _____ Correction 1 _____
Rev. 2. _____ Correction 2 _____
Rev. 3. _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 150+00 - 157+00

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

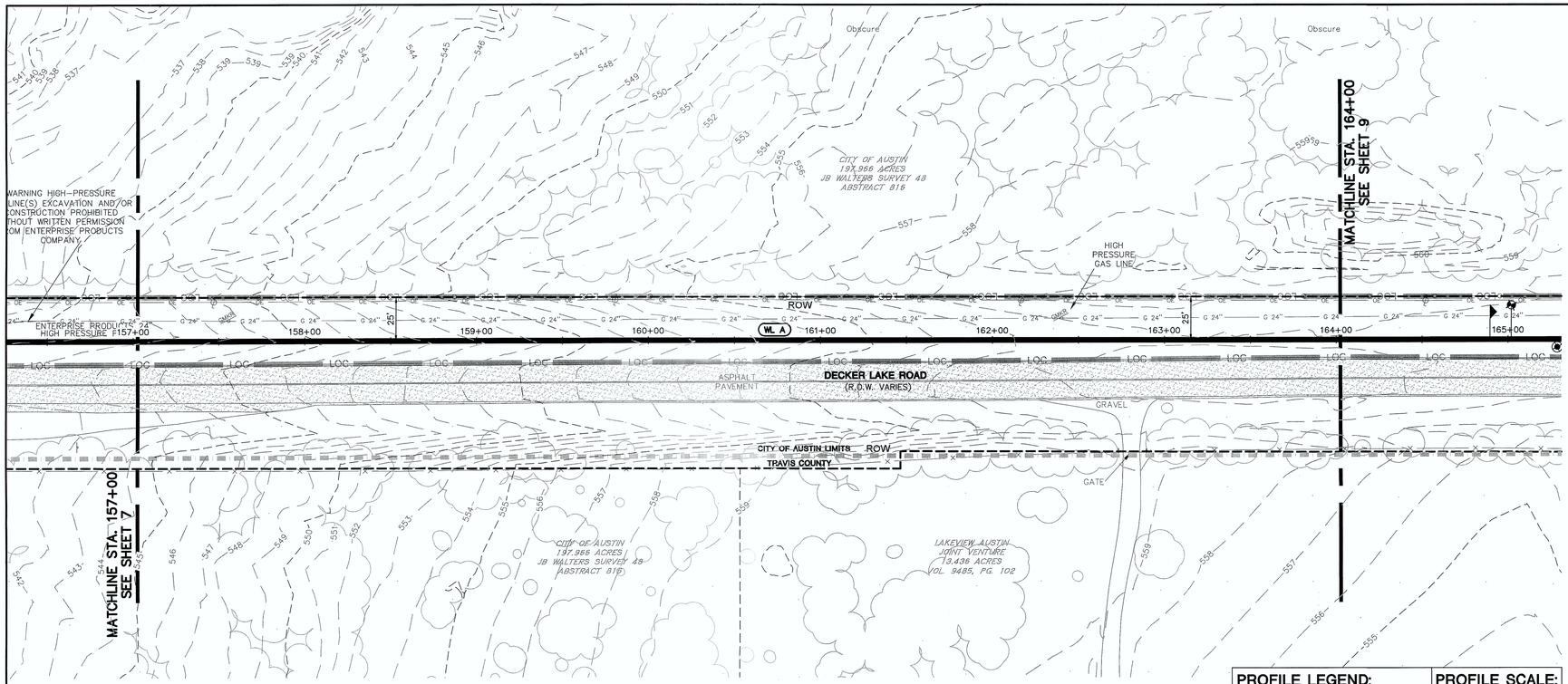
CLUB DEAL 116 & CLUB DEAL 120

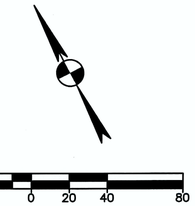
DRAWN BY: JT | DESIGNED BY: AJS | REVIEWED BY: SB | PROJECT NO.: R010696010026

SHEET 7 OF 45

G:\106960\10026\CD DWG\106960026HPP06.dwg modified by jthompson on May 6, 16 2:49 PM

SP-2015-0337D





GAS PIPELINE CONSTRUCTION NOTES:

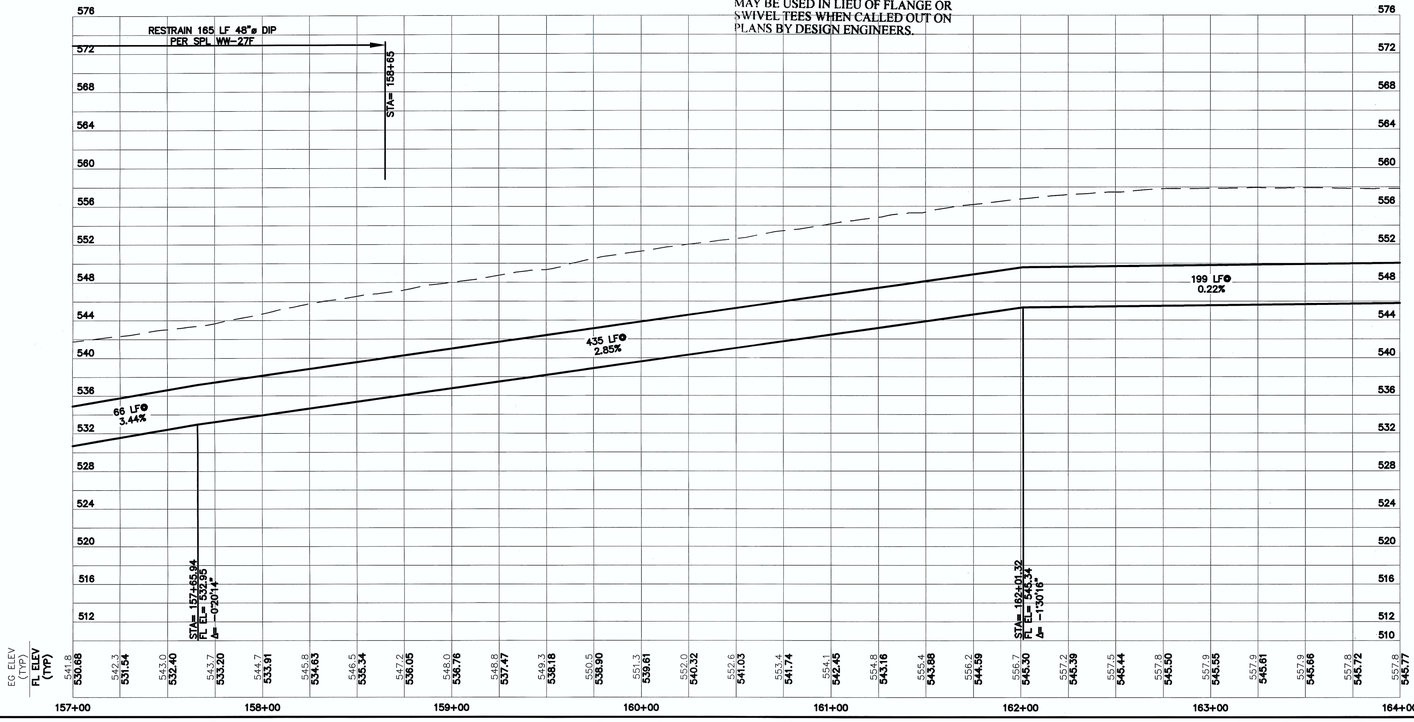
1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.

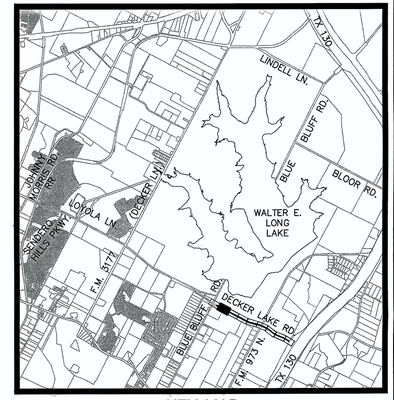
PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	— —	1"= 40' HORIZONTAL
PROPOSED LINE	———	1"= 8' VERTICAL

ALL BRANCH CONNECTION SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON PLANS BY DESIGN ENGINEERS.



BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	



KEY MAP

REVIEWED
JUN 13 2016
Austin Water Utility

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 8 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 157+00 - 164+00

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

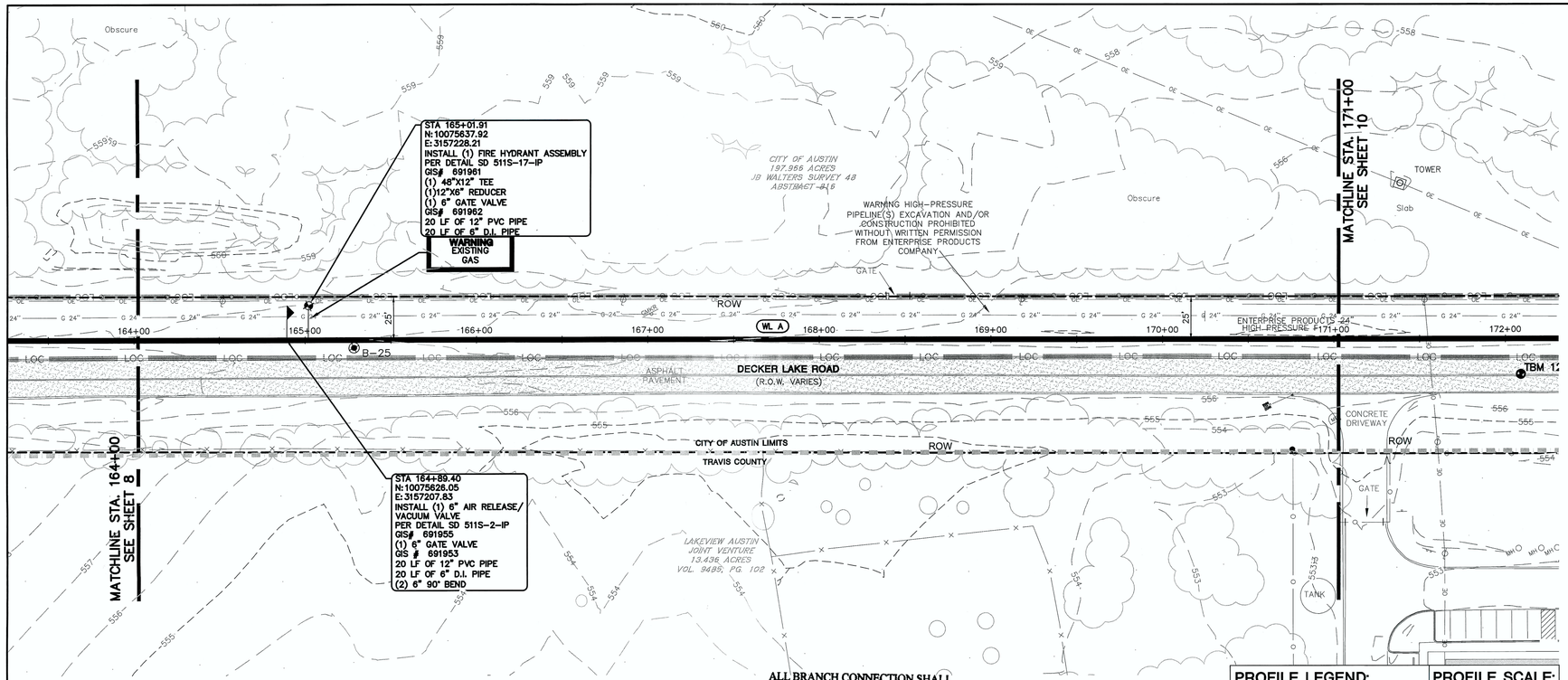
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R0106980010026

SHEET 8 OF 45

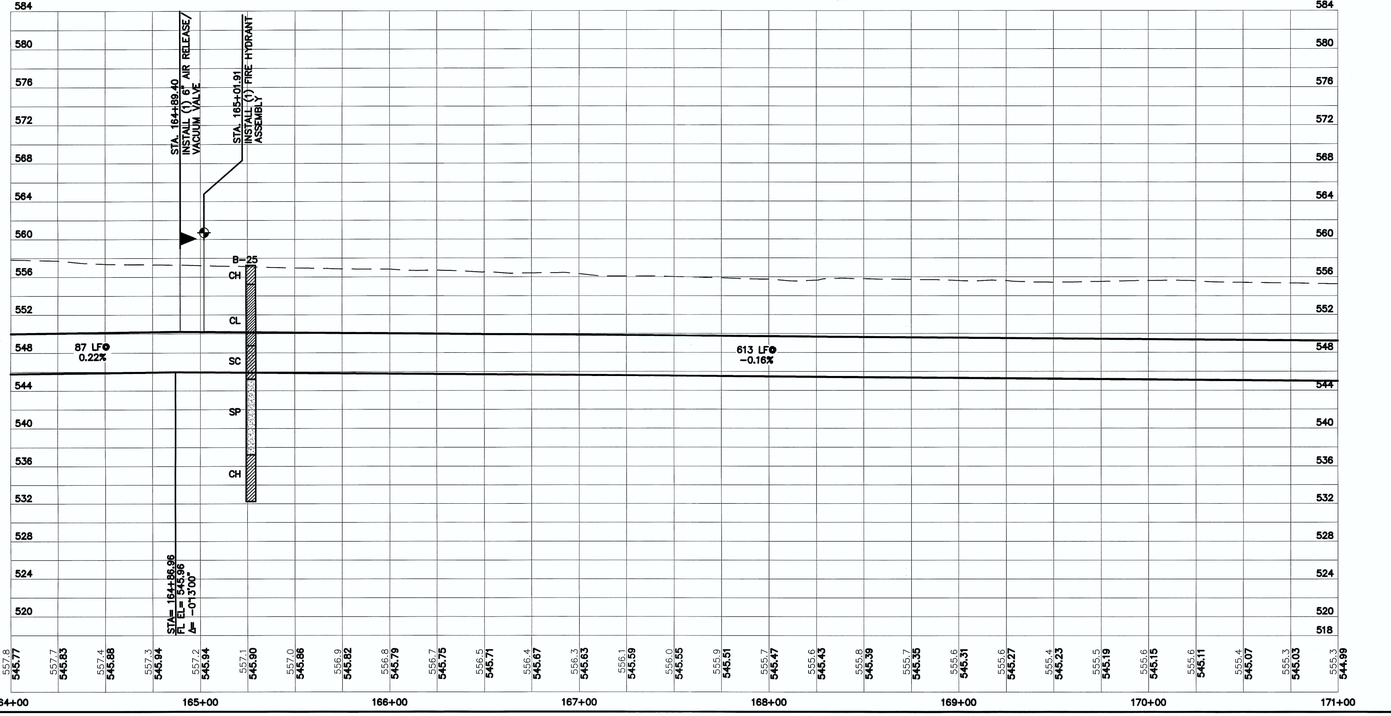
G:\106980\10026\CD DWG\106980026PP06.dwg modified by jthompson on May 6, 16 2:49 PM

SP-2015-0337D



ALL BRANCH CONNECTION SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON PLANS BY DESIGN ENGINEERS.

PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	—— ——	1"= 40' HORIZONTAL
PROPOSED LINE	——	1"= 8' VERTICAL



BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	

REVIEWED
JUN 13 2016
George Resendez
Austin Water Utility

811
Know what's below.
Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

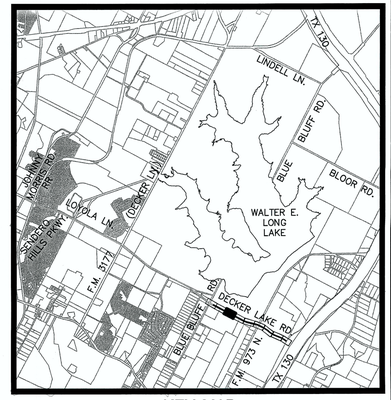
40 0 20 40 80

GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT. EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 9 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____DWPZ ___DDZ___

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 164+00 - 171+00

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

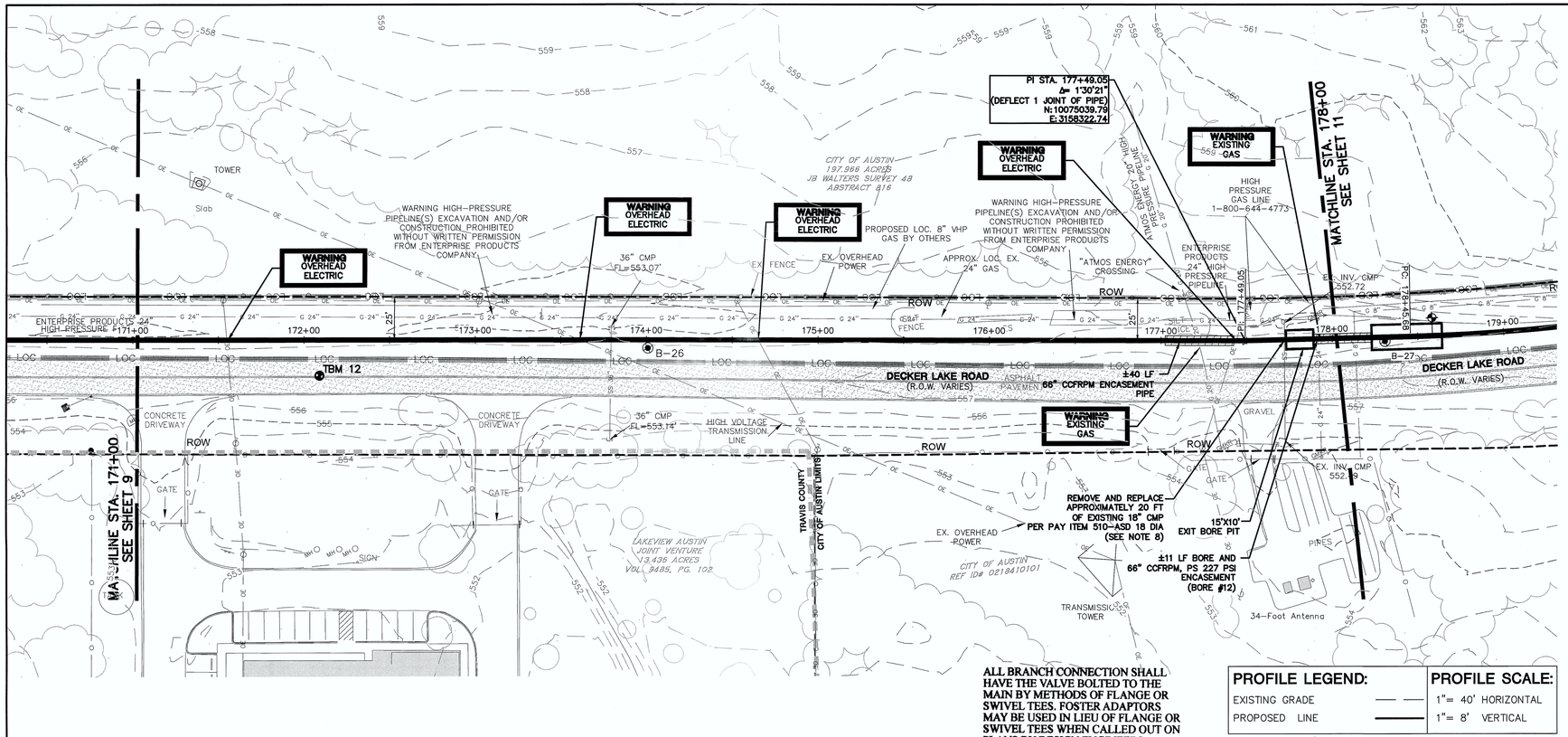
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT | DESIGNED BY: AJS | REVIEWED BY: SB | PROJECT NO.: R010696010026

SHEET 9 OF 45

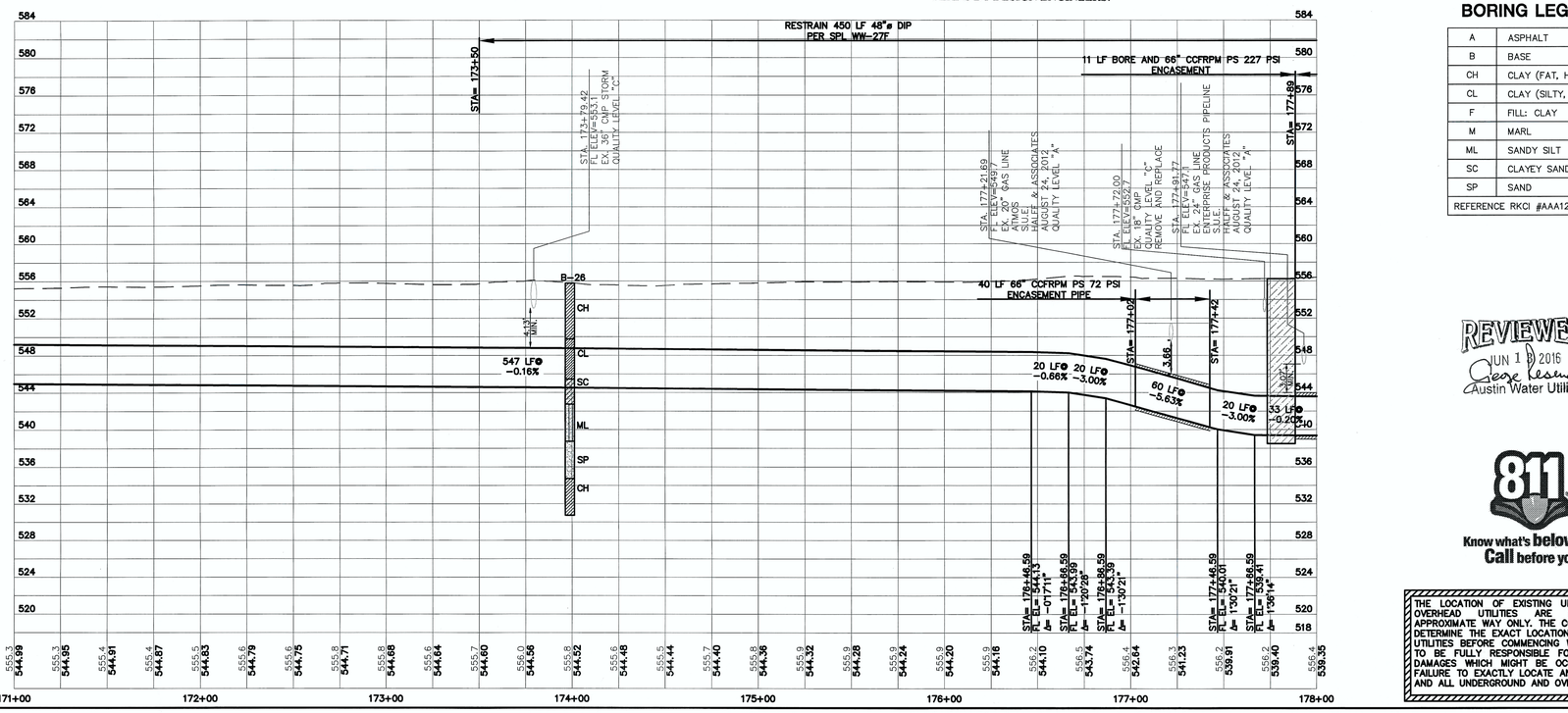
G:\106960\10026\CD DWG\10696026HPP06.dwg modified by jthompson on May 6, 16 2:49 PM

SP-2015-0337D



ALL BRANCH CONNECTION SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON PLANS BY DESIGN ENGINEERS.

PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	———	1"= 40' HORIZONTAL
PROPOSED LINE	———	1"= 8' VERTICAL



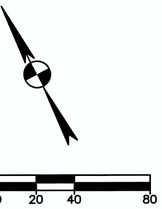
BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	

REVIEWED
JUN 13 2016
George Resendez
Austin Water Utility

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

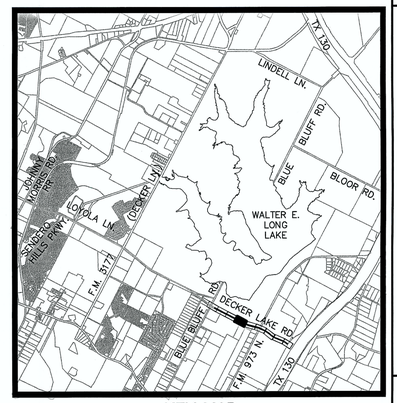


GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.
8. CONTRACTOR SHALL USE A 1 FOOT WIDE BY 6 INCH THICK CONCRETE RING TO SECURE CMP SPLICE WHEN REPLACING EXISTING 18" CMP
9. WHEN DIGGING WITHIN 10 FEET OF A TRANSMISSION OR HIGH PRESSURE DISTRIBUTION GAS LINE, PLEASE CONTACT TONY GARCIA (O: 512-401-1507; C: 915-525-0210; AGARCIA@TXGAS.COM) AT LEAST 48 HOURS IN ADVANCE. SO THAT A TGS REPRESENTATIVE CAN BE SCHEDULED TO BE PRESENT DURING ALL EXCAVATION ACTIVITIES. PLEASE MAINTAIN AT LEAST 5 FEET (OD TO OD) SEPARATION FROM THE TRANSMISSION OR HIGH PRESSURE DISTRIBUTION GAS LINE AS WELL.



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 10 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL
	5/6/16		

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 171+00 - 178+00

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

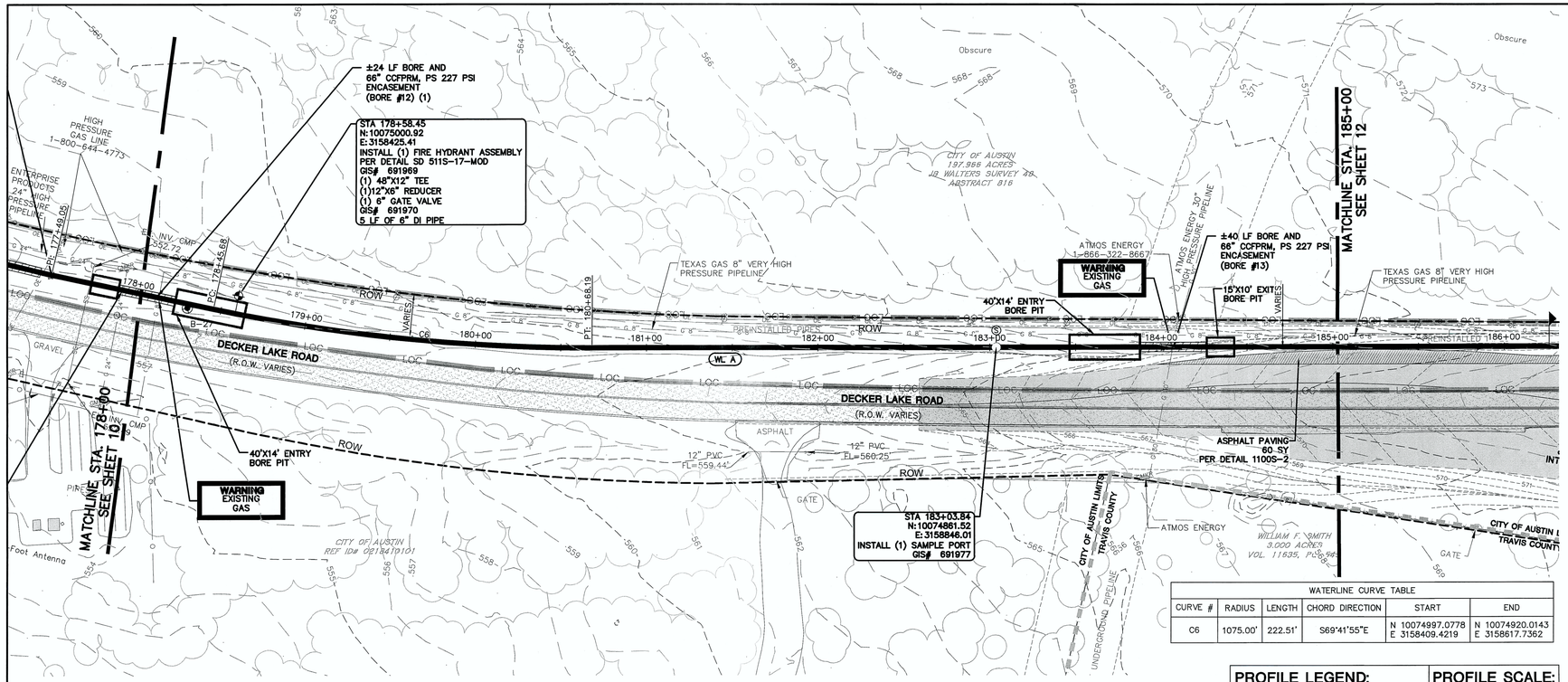
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 10 OF 45

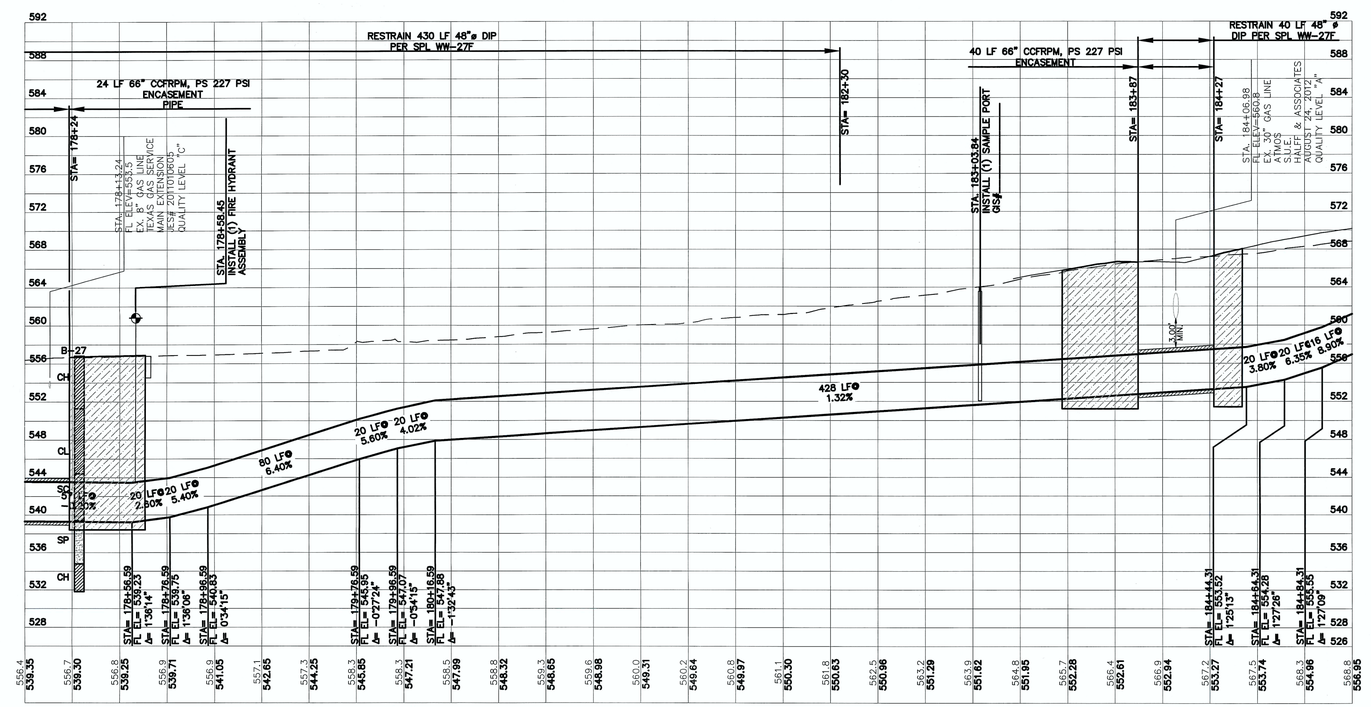
G:\106960\10026\CD DWG\106960026PP06.dwg modified by jthompson on May 6, 16 2:49 PM

SP-2015-0337D



WATERLINE CURVE TABLE					
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START	END
C6	1075.00'	222.51'	S69°41'55"E	N 10074997.0778 E 3158409.4219	N 10074920.0143 E 3158617.7362

PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	— — —	1"= 40' HORIZONTAL
PROPOSED LINE	———	1"= 8' VERTICAL



BORING LEGEND

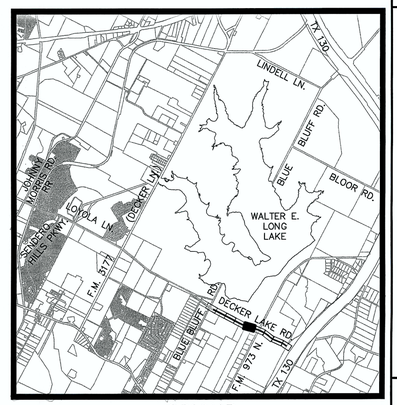
A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND

REFERENCE RKCI #AAA12-022-00

REVIEWED
JUN 13 2016
George Alexander
Austin Water Utility

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 11 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.
8. WHEN DIGGING WITHIN 10 FEET OF A TRANSMISSION OR HIGH PRESSURE DISTRIBUTION GAS LINE, PLEASE CONTACT TONY GARCIA (O: 512-401-1507; C: 915-525-0210; AGARCIA@TXGAS.COM) AT LEAST 48 HOURS IN ADVANCE. SO THAT A TGS REPRESENTATIVE CAN BE SCHEDULED TO BE PRESENT DURING ALL EXCAVATION ACTIVITIES. PLEASE MAINTAIN AT LEAST 5 FEET (OD TO OD) SEPARATION FROM THE TRANSMISSION OR HIGH PRESSURE DISTRIBUTION GAS LINE AS WELL.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 178+00 - 185+00

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

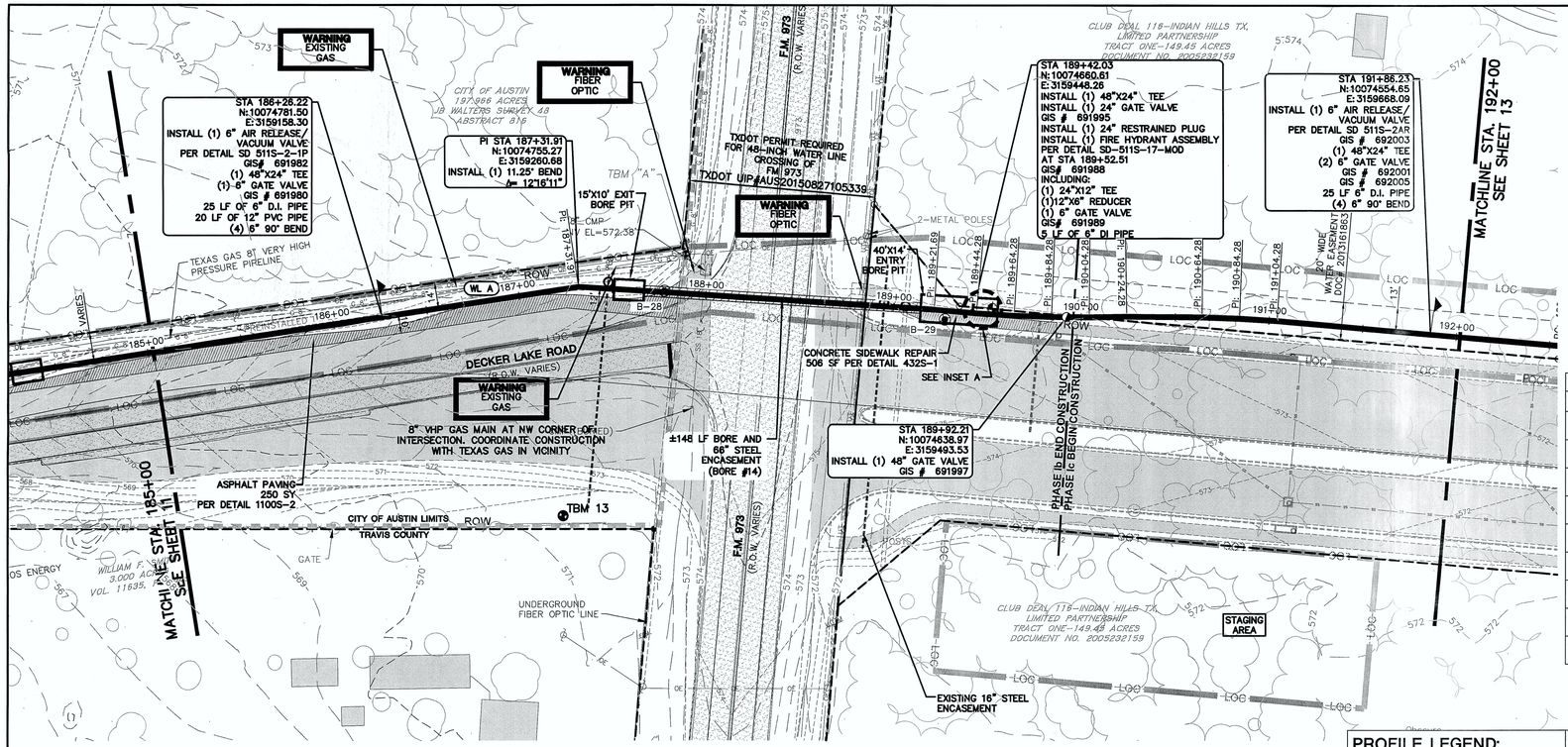
CLUB DEAL 116 & CLUB DEAL 120

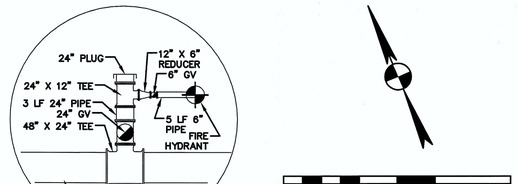
DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 11 OF 45

G:\106960\10026\CD DWG\106960026HPP06.dwg modified by jthompson on May 6, 16 2:49 PM

SP-2015-0337D





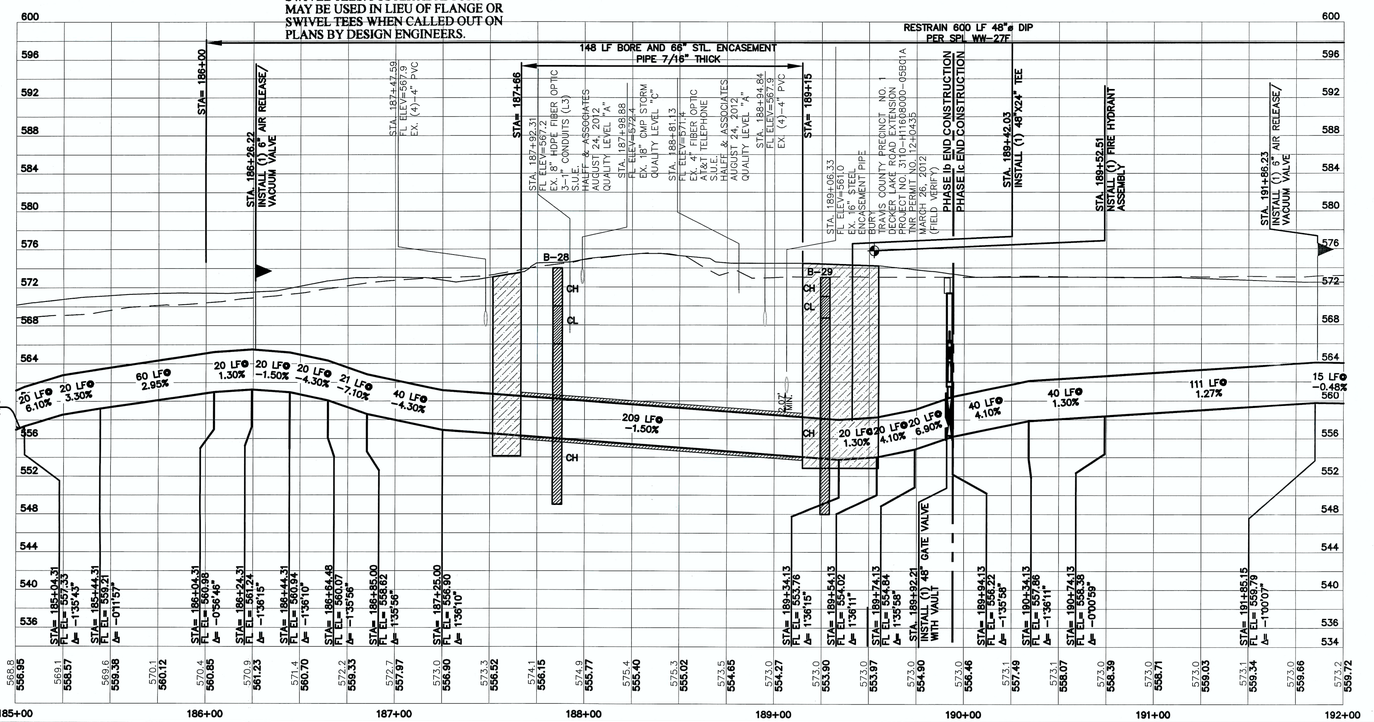
INSET A

WATERLINE LINE DATA		
STA	Δ °	START
189+21.69	1°24'41"	N 10074670.1723 E 3159430.3177
189+44.28	1°30'00"	N 10074659.5519 E 3159450.2475
189+64.28	1°30'00"	N 10074650.6114 E 3159468.1379
189+84.28	1°30'00"	N 10074642.1423 E 3159486.2563
190+04.28	1°30'00"	N 10074634.1504 E 3159504.5901
190+24.28	1°30'00"	N 10074626.6412 E 3159523.1269
190+64.28	1°30'00"	N 10074610.6574 E 3159559.7945
190+84.28	1°33'07"	N 10074602.1883 E 3159577.9129
191+04.28	1°28'47"	N 10074593.2316 E 3159595.7952

PROFILE LEGEND:
EXISTING GRADE
PROPOSED LINE

PROFILE SCALE:
1"= 40' HORIZONTAL
1"= 8' VERTICAL

ALL BRANCH CONNECTION SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON PLANS BY DESIGN ENGINEERS.



BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	

REVIEWED
JUN 13 2016
Austin Water Utility

811 Know what's below. Call before you dig.

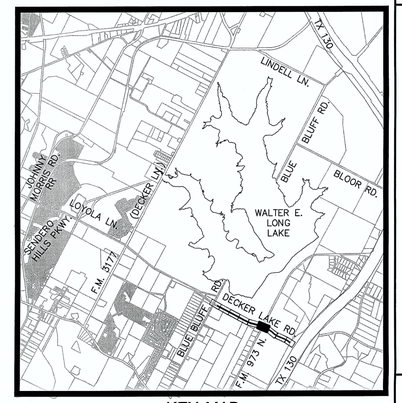
THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.
8. CONTRACTOR SHALL CONTACT HOUMAN HEMATI (HOUMAN.HEMATI@TXDOT.GOV) AT 512-997-2239 48 HOURS IN ADVANCE OF ANY WORK OR TRAFFIC CONTROL OPERATIONS WITHIN TXDOT RIGHT-OF-WAY. ALL UTILITY PITS OPENED WITHIN THE HORIZONTAL CLEAR ZONE (30-FEET FROM TRAVEL LANE) SHALL BE PROPERLY PROTECTED, IN COMPLIANCE WITH NATIONAL COOPERATIVE HIGHWAY RESEARCH PROJECT REPORT 350, WITH CONCRETE TRAFFIC BARRIERS, METAL GUARD FENCING, APPROPRIATE END TREATMENTS, OR OTHER APPROPRIATE WARNING DEVICES AS APPROVED BY TXDOT.
9. WHEN DIGGING WITHIN 10 FEET OF A TRANSMISSION OR HIGH PRESSURE DISTRIBUTION GAS LINE, PLEASE CONTACT TONY GARCIA (O: 512-401-1507; C: 915-525-0210; AGARCIA@TXGAS.COM) AT LEAST 48 HOURS IN ADVANCE. SO THAT A TGS REPRESENTATIVE CAN BE SCHEDULED TO BE PRESENT DURING ALL EXCAVATION ACTIVITIES. PLEASE MAINTAIN AT LEAST 5 FEET (OD TO OD) SEPARATION FROM THE TRANSMISSION OR HIGH PRESSURE DISTRIBUTION GAS LINE AS WELL.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL EXISTING FENCES AND GATES REMOVED/DAMAGED DURING CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN EXISTING CONDITION PRIOR TO CONSTRUCTION.



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 12 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE
STA. 185+00 - 192+00

INDIAN HILLS 48-INCH
WATER LINE NO. 1 PH. 1b & 1c

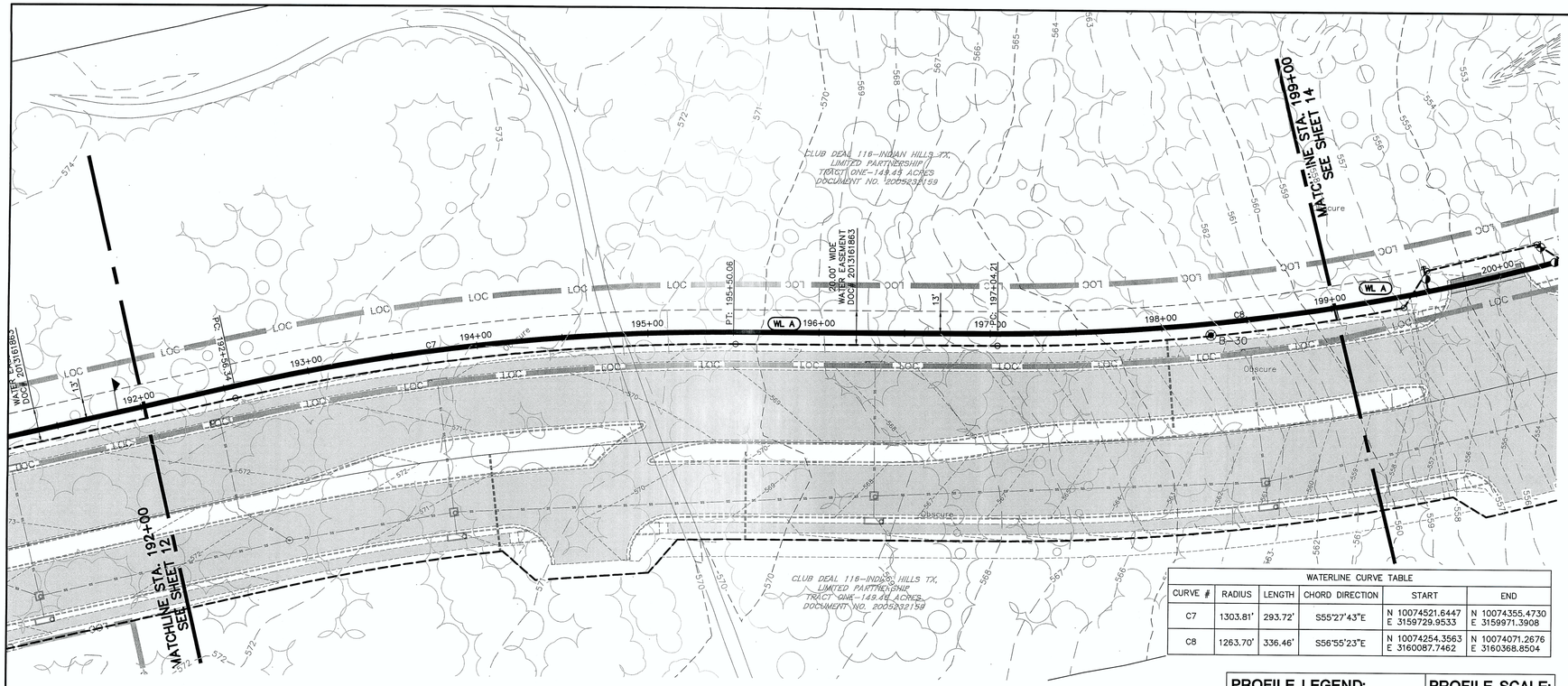
CLUB DEAL 116 &
CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 12 OF 45

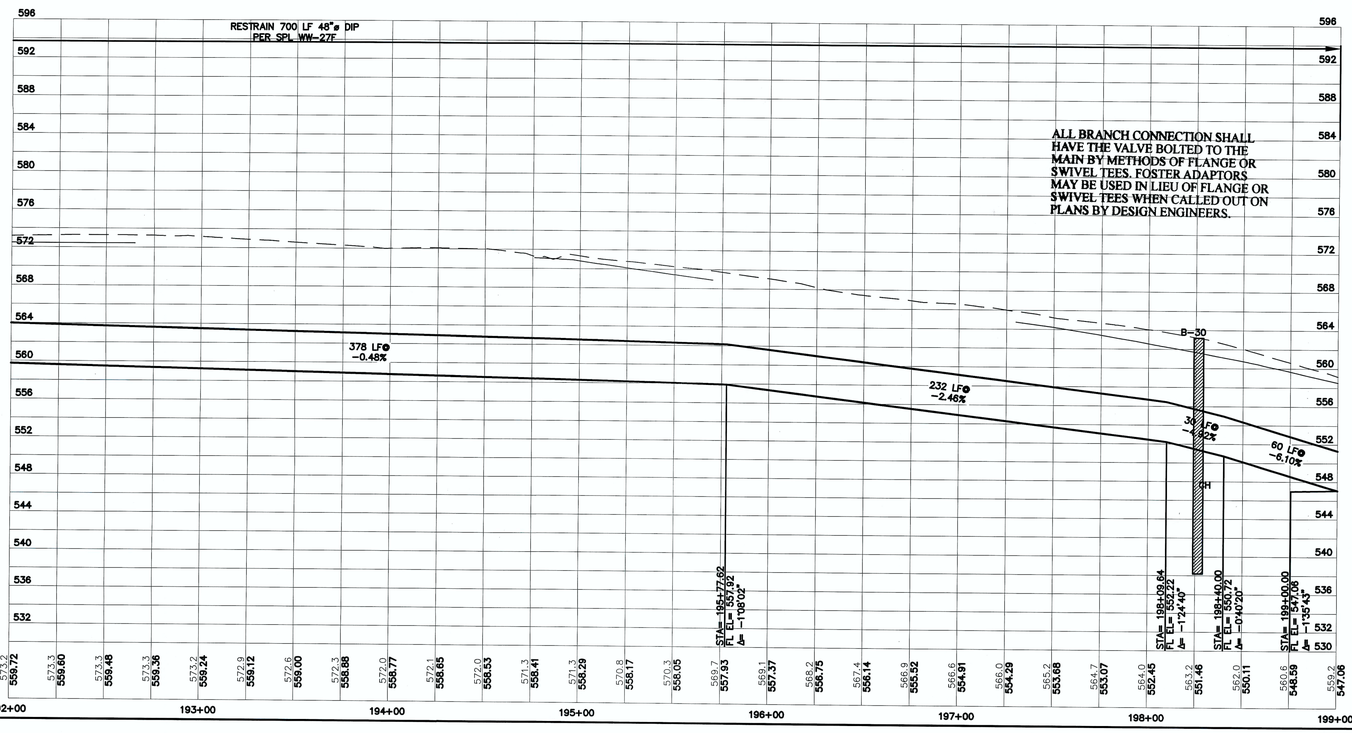
G:\106960\10028\CD DWG\10696002BHPP06-JR.dwg modified by sblew on May 6, 16 5:52 PM

SP-2015-0337D



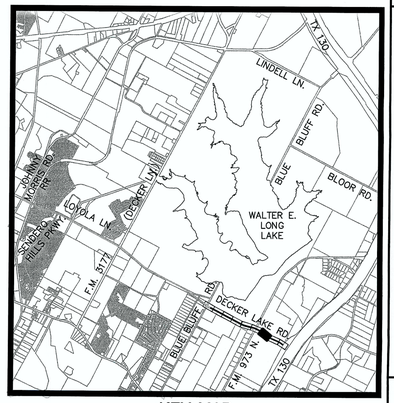
WATERLINE CURVE TABLE					
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START	END
C7	1303.81'	293.72'	S55°27'43"E	N 10074521.6447 E 3159729.9533	N 10074355.4730 E 3159971.3908
C8	1263.70'	336.46'	S56°55'23"E	N 10074254.3563 E 3160087.7462	N 10074071.2676 E 3160368.8504

PROFILE LEGEND:	PROFILE SCALE:
EXISTING GRADE —— ——	1"= 40' HORIZONTAL
PROPOSED LINE ————	1"= 8' VERTICAL



BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	

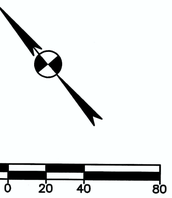


KEY MAP

REVIEWED
JUN 13 2016
George Resendez
Austin Water Utility

811
Know what's below.
Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.



GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL EXISTING FENCES AND GATES REMOVED/DAMAGED DURING CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN EXISTING CONDITION PRIOR TO CONSTRUCTION.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 13 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____
Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 192+00 - 199+00

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

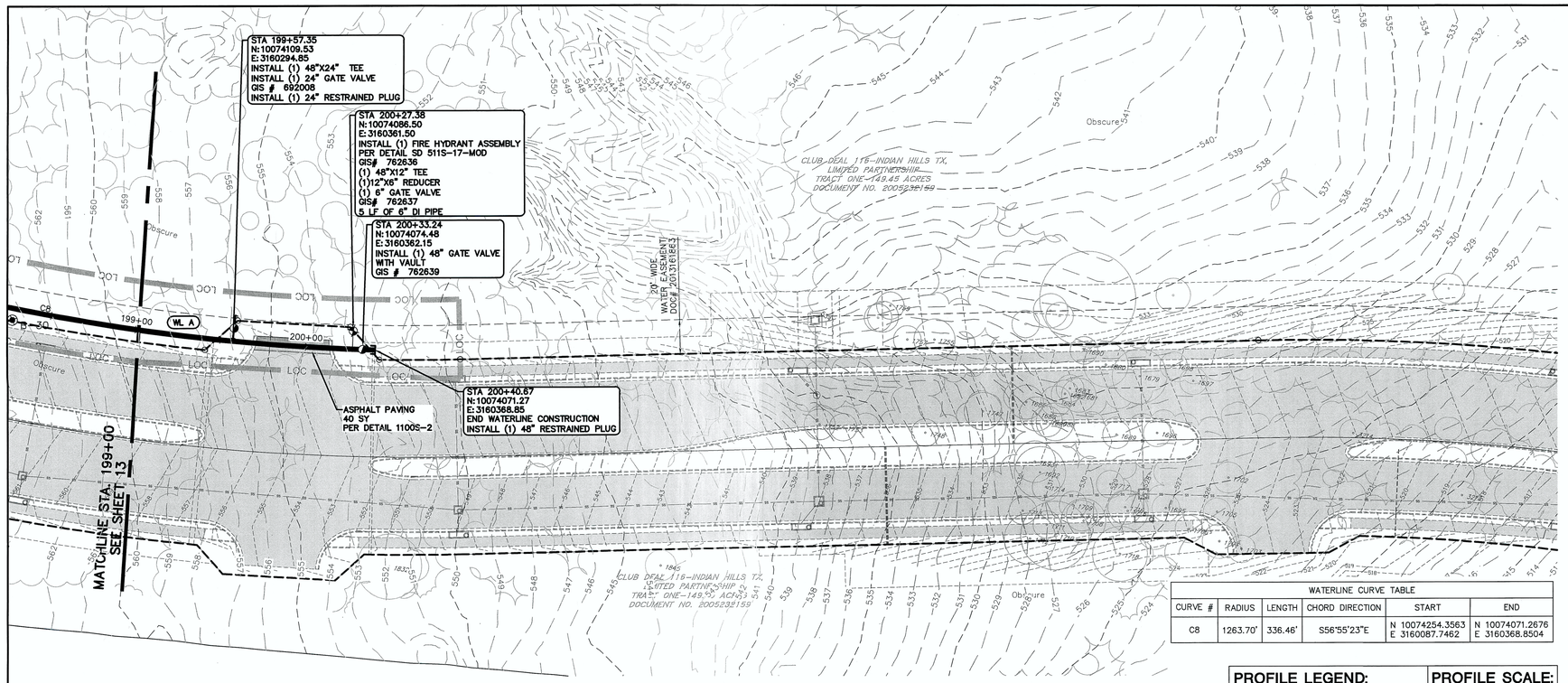
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 13 OF 45

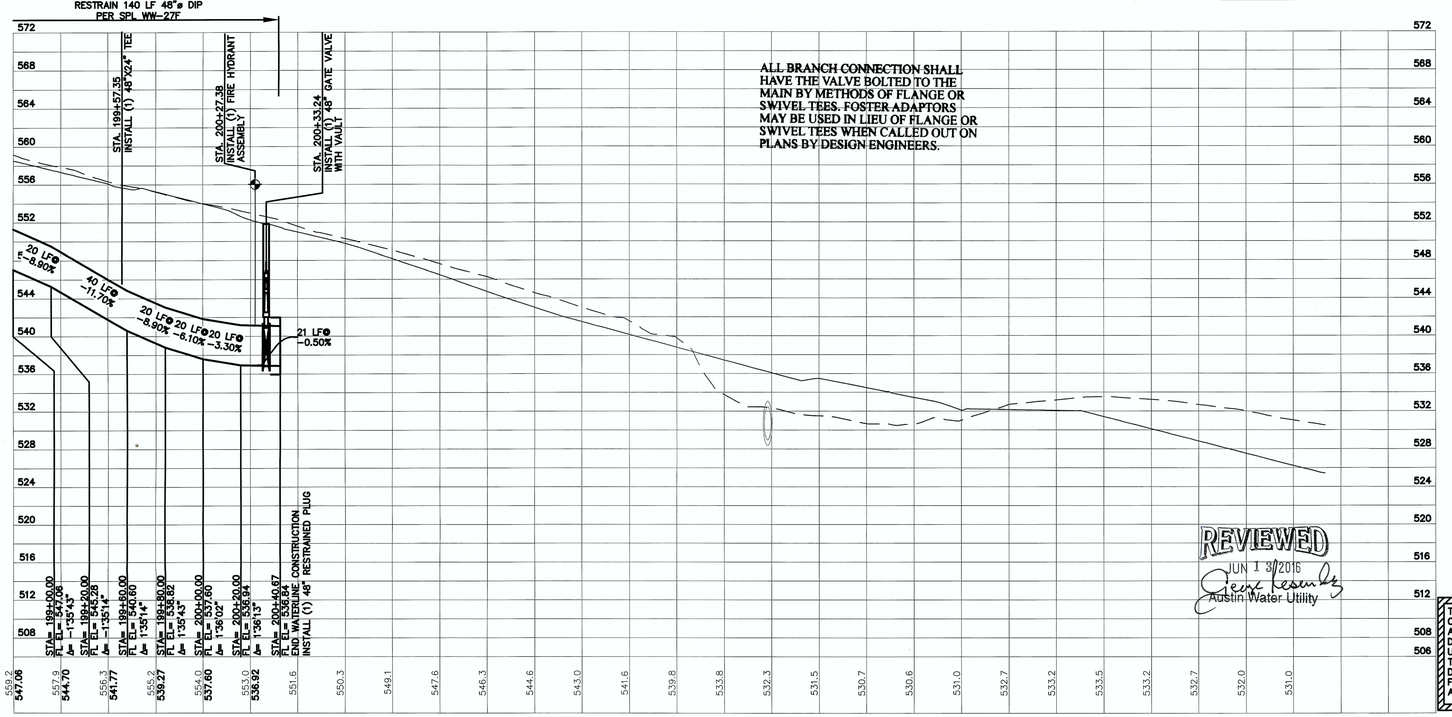
G:\10696\10026\CD DWG\10696010026HIPP06.dwg modified by jthompson on May 6, 16 2:49 PM

SP-2015-0337D



WATERLINE CURVE TABLE					
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START	END
C8	1263.70'	336.46'	S56°55'23"E	N 10074254.3563 E 3160087.7462	N 10074071.2676 E 3160368.8504

PROFILE LEGEND:		PROFILE SCALE:
EXISTING GRADE	— — —	1"= 40' HORIZONTAL
PROPOSED LINE	———	1"= 8' VERTICAL



ALL BRANCH CONNECTION SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON PLANS BY DESIGN ENGINEERS.

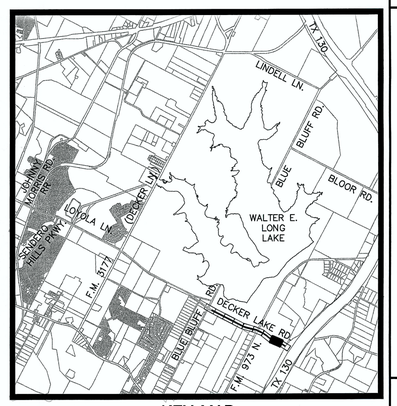
BORING LEGEND

A	ASPHALT
B	BASE
CH	CLAY (FAT, HARD)
CL	CLAY (SILTY, LEAN)
F	FILL: CLAY
M	MARL
ML	SANDY SILT
SC	CLAYEY SAND
SP	SAND
REFERENCE RKCI #AAA12-022-00	

REVIEWED
JUN 13 2016
Austin Water Utility

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 14 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

GAS PIPELINE CONSTRUCTION NOTES:

1. SEE NOTES ON SHEET 3 FOR CONSTRUCTION REQUIREMENTS IN VICINITY OF GAS PIPELINES.

GENERAL NOTES:

1. ALL CURB, GUTTER, MEDIAN, AND ALL OTHER INCIDENTAL DAMAGE SHALL BE REPLACED TO ITS ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
2. ALL TEMPORARY REMOVAL AND REPLACEMENT OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. NO SEPARATE PAY ITEM.
3. CONTRACTOR SHALL SUBMIT CONSTRUCTION SEQUENCE AND JOINT CLOSURE SCHEDULE FOR ENGINEER AND AWU APPROVAL PRIOR TO PIPE FABRICATION.
4. ALL DI PIPE SHALL INCLUDE DOUBLE POLY WRAP.
5. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT, EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPES, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THE REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKING SHALL NOT BE INSTALLED.
6. CONTRACTOR SHALL SET AARV AND GV MANHOLE RIM ELEVATIONS BASED ON EXISTING GROUND ELEVATION.
7. ALL RESTRAINTS FOR WATER LINES EQUAL OR LARGER THAN 24" IN DIAMETER SHALL COMPLY WITH SPL WW-27F.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL EXISTING FENCES AND GATES REMOVED/DAMAGED DURING CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN EXISTING CONDITION PRIOR TO CONSTRUCTION.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106329
LICENSED
PROFESSIONAL ENGINEER
5/6/16

PLAN AND PROFILE STA. 199+00 - END

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

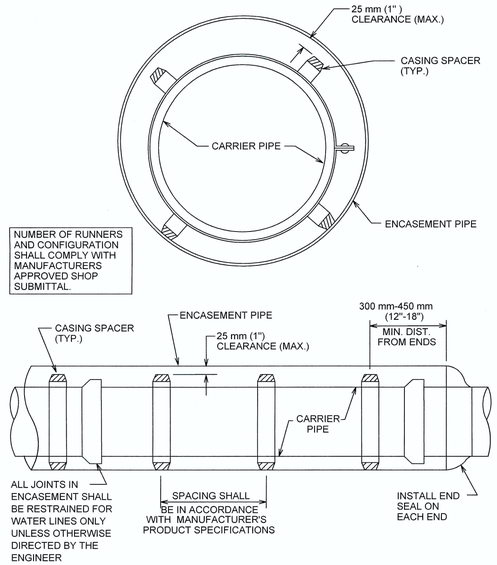
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010698010026

SHEET 14 OF 45

G:\10696\10026\CD DWG\10696026HPP06.dwg modified by jthompson on May 6, 16 2:49 PM

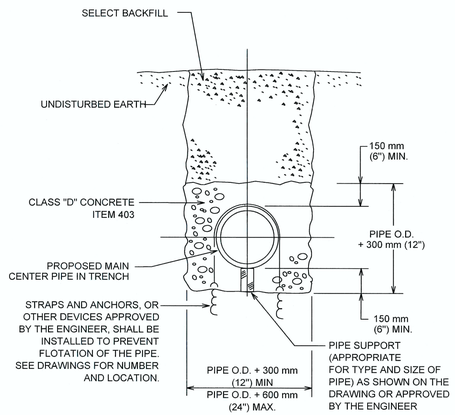
SP-2015-0337D



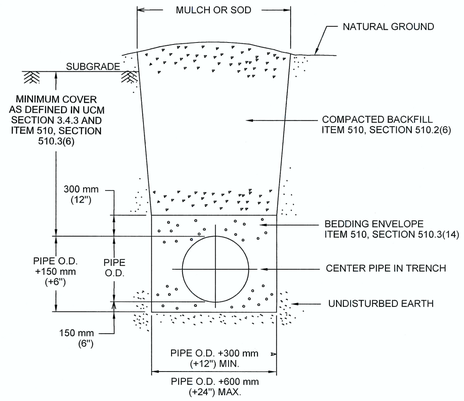
APPLICABLE REFERENCES

STANDARD SPECIFICATION: ITEM 510S.3 (19) W/WW STANDARD PRODUCTS LIST: SPLWW-575 FOR CASING SPACER AND SPLWW-575A FOR END SEAL.

CITY OF AUSTIN AUSTIN WATER UTILITY		ENCASEMENT DETAIL W/ CASING SPACERS	
RECORD COPY SIGNED BY KATHI L. FLOWERS	2/28/05	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 501S-1
ADOPTED			



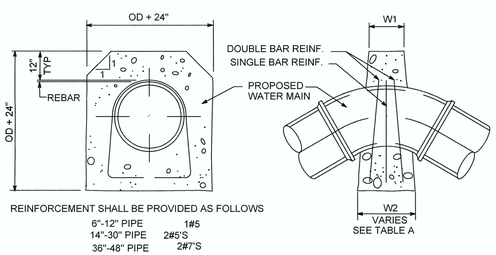
CITY OF AUSTIN WATER AND WASTEWATER UTILITY		CONCRETE ENCASEMENT	
RECORD COPY SIGNED BY LEON BARBA	8/18/00	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 505S-1
ADOPTED			



REFERENCES:

1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5
ADOPTED			



REINFORCEMENT SHALL BE PROVIDED AS FOLLOWS

6"-12" PIPE	1#5
14"-30" PIPE	2#5'S
36"-48" PIPE	2#7'S

VERTICAL DOWN BEND

TABLE A
UPWARD THRUST GRAVITY BLOCKS

PIPE DIA.	MIN. TOP WIDTH W1	ANGLE (degrees)	BOTTOM WIDTH-W2 (in)
6"	6"	0-5	NOTE 2
		5-15	24
		15-25	48
		≻ 25	NOTE 1
8"	6"	0-5	NOTE 2
		5-9	30
		9-15	36
		≻ 15	NOTE 1
12"	6"	0-5	NOTE 2
		5-15	48
		≻ 15	NOTE 1
16"	12"	0-5	NOTE 2
		5-10	60
		10-15	96
		≻ 15	NOTE 1
24" THRU 36" DIA.		≻ 5.0	NOTE 1
42" THRU 48" DIA.		≻ 3.0	NOTE 1

NOTES:

1- FOR ANGLES GREATER THAN THOSE INDICATED RESTRAINED JOINTS SHALL BE INSTALLED

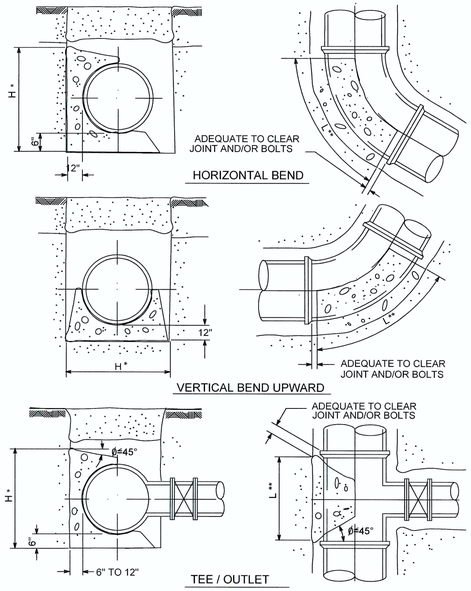
2- FOR JOINT DEFLECTIONS LESS THAN 5 DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN 42" IN DIAMETER.

THRUST BLOCK DESIGN AS FOLLOWS

A. PRESSURE OF 150 P.S.I. (ACTUAL IF HIGHER) + 50 % SURGE ALLOWANCE

B. MAXIMIM SOIL BEARING SEE TABLE BELOW

SOIL TYPES	PRESSURE
LOOSE OR SPONGY SOIL	1500 Lb/Sq.Ft.
UNDISTURBED SOIL, CALICHE	2000 Lb/Sq.Ft.
LIMESTONE ROCK	4000 Lb/Sq.Ft.



TEE / OUTLET

* THE DIMENSION FOR "H" MUST BE GREATER THAN DIAMETER OF THE PIPE
** LENGTH "L" ALONG THE BEND MUST BE GREATER THAN "H" AND LESS THAN 2 TIMES "H"

CITY OF AUSTIN WATER AND WASTEWATER UTILITY		CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON	2/11/86	ADOPTED: 2/11/86 SCALE: N.T.S.	STANDARD NO. 510-6
APPROVED	DATE	INITIAL:	1 OF 2

CITY OF AUSTIN WATER AND WASTEWATER UTILITY		CONCRETE THRUST BLOCKING	
RECORD COPY SIGNED BY JAMES E. THOMPSON	2/11/86	ADOPTED: 2/11/86 SCALE: N.T.S.	STANDARD NO. 510-6
APPROVED	DATE	INITIAL:	2 OF 2

DESCRIPTION: STANDARD MANUAL
REV. DATE: 2-27-97

REVIEWED
JUN 13 2016
Austin Water Utility

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 15 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

APPROVAL | REVISION: | NO. | DATE

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel: (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2015

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

WATER DETAILS

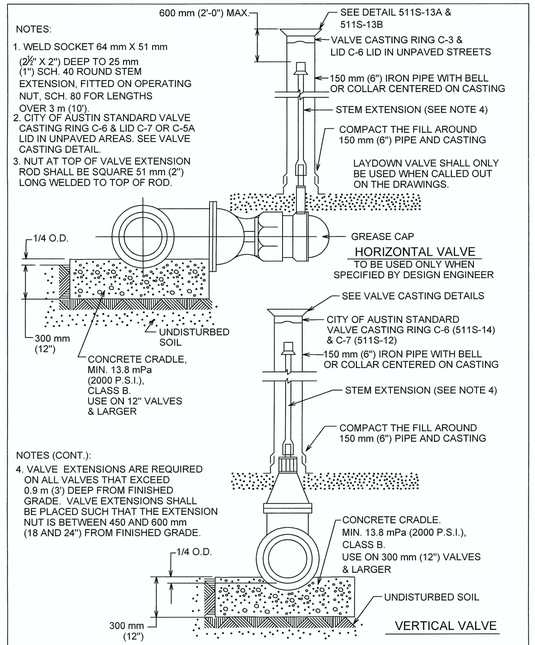
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT | DESIGNED BY: AJS | REVIEWED BY: SB | PROJECT NO.: R010696010026

SHEET 15 OF 45

G:\10696\10026\CD DWG\10696026WD01.dwg modified by jthompson on Jul 22, 15 3:00 PM

SP-2015-0337D



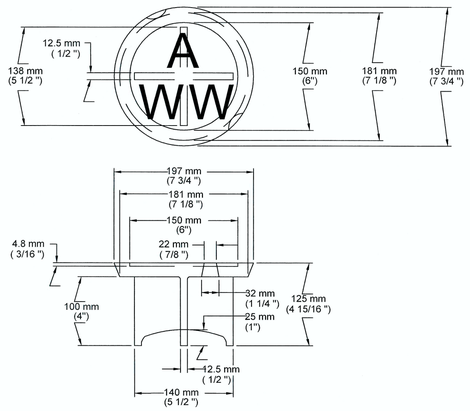
NOTES:

1. WELD SOCKET 64 mm X 51 mm (2½" X 2") DEEP TO 25 mm (1") SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 3 m (10').
2. CITY OF AUSTIN STANDARD VALVE CASTING RING C-6 & LID C-7 OR C-5A LID IN UNPAVED AREAS. SEE VALVE CASTING DETAIL.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 51 mm (2") LONG WELDED TO TOP OF ROD.

NOTES (CONT.):

4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 AND 600 mm (18 AND 24") FROM FINISHED GRADE.

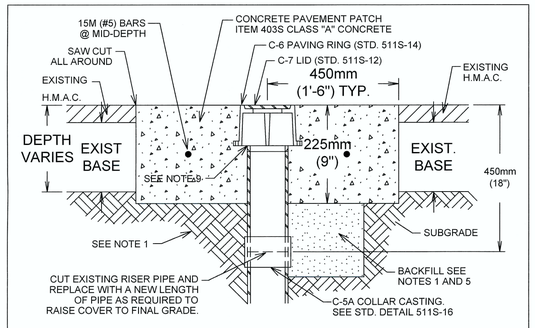
CITY OF AUSTIN AUSTIN WATER UTILITY		TYPICAL GATE VALVE 100 mm-600 mm (4"-24")	
RECORD COPY SIGNED BY KATHI L. FLOWERS	3/9/04 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-7



NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. TYPICAL FILLET IS 4.8 mm (3/16 ") RADIUS
3. LETTERING SHALL BE 38 mm (1 1/2 ") HEIGHT AND LOCATED AS SHOWN.
4. THIS LID REQUIRES TWO (2) PICK SLOTS.
5. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID.
6. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
7. FINISH BY REMOVING FINS AND FLASHING; PAINT WITH BLACK ASPHALT COATING,
8. WEIGHT: APPROXIMATELY 6 kg (13 lbs).

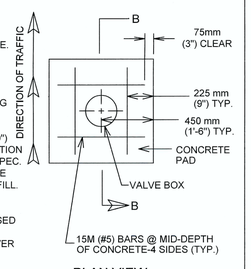
CITY OF AUSTIN WATER AND WASTEWATER UTILITY		VALVE BOX CASTING C-7 LID	
RECORD COPY SIGNED BY KATHI F. PAYNE	4/5/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-12



SECTION B-B

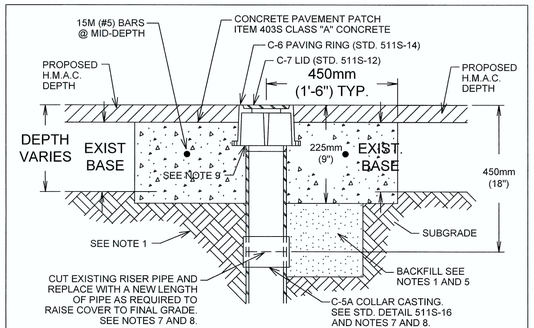
NOTES:

1. SUB-GRADE SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. REMOVE EXISTING RISER PIPE DOWN 450mm (18") AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND A C-5A CASTING.
5. WHERE CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 500mm (20") DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.
7. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
8. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 5.5m (18')
9. PAVING RING SHALL SIT FLUSH ON RISER.



PLAN VIEW

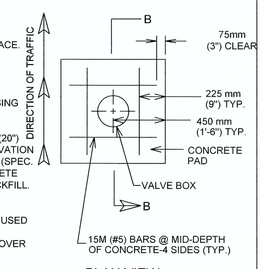
CITY OF AUSTIN AUSTIN WATER UTILITY		WATER VALVE BOX ADJUSTMENT TO GRADE W/FULL DEPTH CONCRETE	
RECORD COPY SIGNED BY KATHI L FLOWERS	08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-13A



SECTION B-B

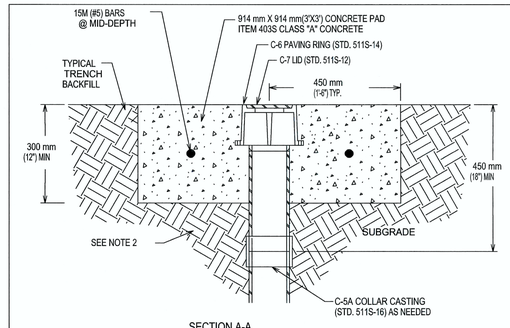
NOTES:

1. SUB-GRADE SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. REMOVE EXISTING RISER PIPE DOWN 450mm (18") AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND A C-5A CASTING.
5. WHERE CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 500mm (20") DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.
7. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
8. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 5.5m (18')
9. PAVING RING SHALL SIT FLUSH ON RISER.



PLAN VIEW

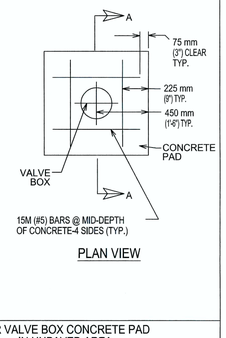
CITY OF AUSTIN AUSTIN WATER UTILITY		WATER VALVE BOX ADJUSTMENT TO GRADE W/CONCRETE AND H.M.A.C.	
RECORD COPY SIGNED BY KATHI L FLOWERS	08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-13B



SECTION A-A

NOTES:

1. PADS ARE TO BE INSTALLED AROUND VALVE BOX LIDS ON ALL WATER VALVES IN UNPAVED AREAS.
2. TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 510.
3. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL GRADING OF TRENCH BACKFILL IS COMPLETED.
4. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE VALVE OPERATOR.
5. REINFORCING STEEL SHALL MEET ITEM 406S, REINFORCING STEEL.
6. IN UNDEVELOPED AREAS THAT WILL NOT BE REGULARLY MOWED AND MAINTAINED, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE PAD. DELINEATOR SHALL BE BLUE FOR WATER (FLEX STAKE HD600 OR APPROVED EQUAL) AND PURPLE FOR RECLAIMED WATER (CHRISTY'S PART NO. IDSF66.PRW WITH VANDAL-RESISTANT ANCHOR KIT PART NO. IDSF ANCHOR INSTALLED OR APPROVED EQUAL) AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE, TYPE I REFLECTIVE TAPE (COLE FARMS OR APPROVED EQUAL) MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.



PLAN VIEW

CITY OF AUSTIN AUSTIN WATER UTILITY		WATER VALVE BOX CONCRETE PAD IN UNPAVED AREA	
RECORD COPY SIGNED BY SAM ANGOORI	10/19/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-13C

REVIEWED
JUN 13 2016
Austin Water Utility

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 16 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	APPROVAL / REVISION

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2015

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

WATER DETAILS

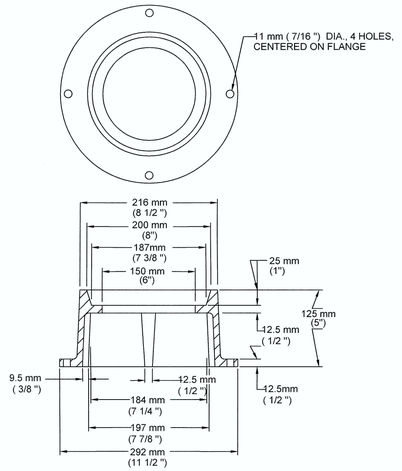
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 16 OF 45

G:\010696\010026\CD DWG\10696026WW002.dwg modified by jthompson on Jul 22, 15 3:07 PM

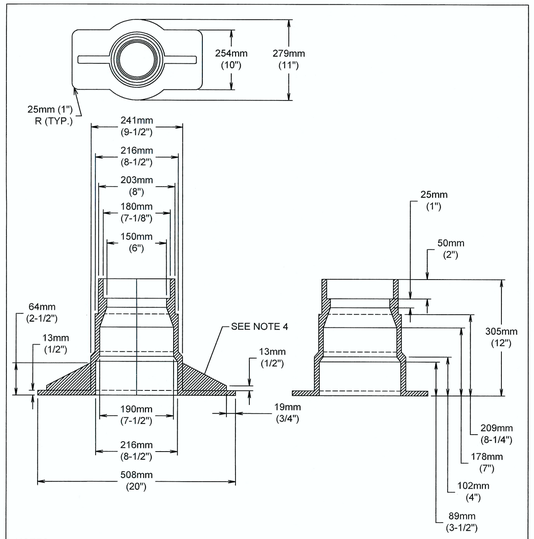
SP-2015-0337D



NOTES:

1. MATERIALS SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION & CASTING NUMBER & THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH RING.
3. DRAFT & SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
4. FINISH BY REMOVING FINS & FLASHING; PAINT WITH BLACK ASPHALT COATING.
5. WEIGHT: APPROXIMATELY 10.5 kg (23 lbs).

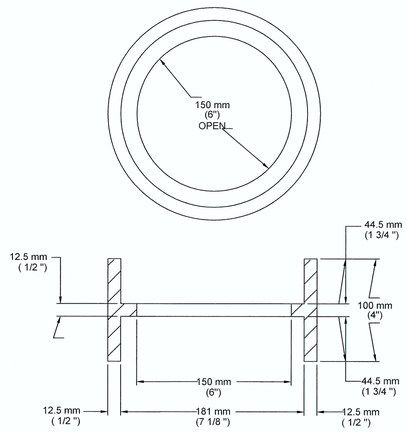
CITY OF AUSTIN WATER AND WASTEWATER UTILITY	VALVE BOX CASTING C-6 PAVING RING	
RECORD COPY SIGNED BY KATHI F. PAYNE 4/5/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-14



NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER AND THE COUNTRY WHERE CAST SHALL BE DISTINCTLY CAST ONTO EACH VALVE BOX.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDED REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.
5. WEIGHT: APPROXIMATELY 78 LBS.

CITY OF AUSTIN AUSTIN WATER UTILITY	POTABLE WATER VALVE BOX CASTING	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-15



NOTES:

1. MATERIALS SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THIS COLLAR REQUIRED ONLY WITH BOOTS SUPPLIED PRIOR 1988
3. THE MANUFACTURER'S IDENTIFICATION & CASTING NUMBER & THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH COLLAR.
4. DRAFT & SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
5. FINISH BY REMOVING FINS & FLASHING; PAINT WITH BLACK ASPHALT COATING.
6. WEIGHT: APPROXIMATELY 8 kg (17 lbs).

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	VALVE BOX CASTING C-5A COLLAR	
RECORD COPY SIGNED BY KATHI F. PAYNE 4/5/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-16

REVIEWED
JUN 13 2016
Austin Water Utility

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 17 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

DATE	NO.	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

WATER DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

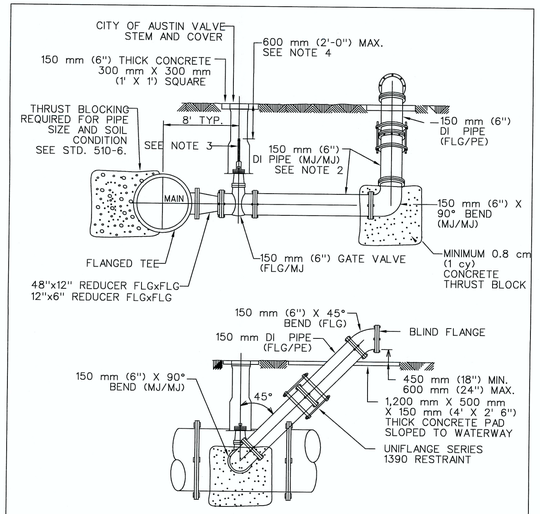
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 17 OF 45

G:\106960\1026\CD DWG\106960026WWD04.dwg modified by jthompson on Jan 21, 16 5:22 PM

SP-2015-0337D



NOTES:
1. PROVIDE 8 MIL POLY FILM WRAP FOR PIPE AND FITTINGS.
2. PROVIDE JOINT RESTAINT OR USE ANCHOR COUPLINGS FOR ALL JOINTS.
3. WELD SOCKET 64 mm X 51 mm (2 ½" X 2") DEEP TO 25 mm (1") SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 3 m (10').
4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 mm AND 60 mm (18" AND 24") FROM FINISHED GRADE.

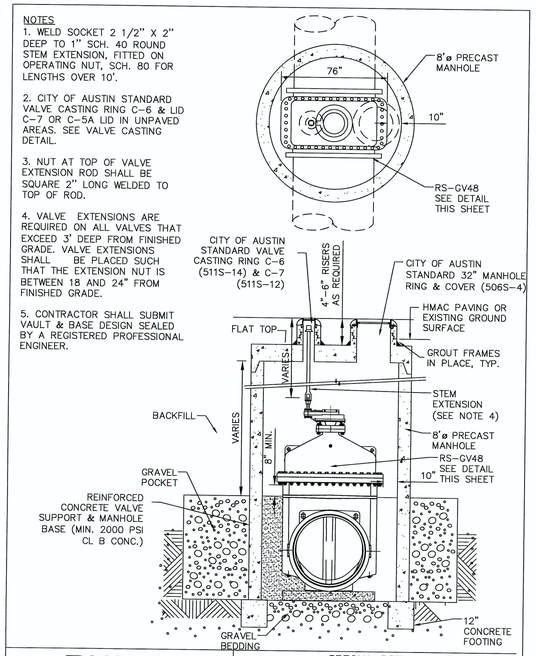
BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

SPECIAL DETAIL DRAIN VALVE ASSEMBLY

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. SD-511S-9A

NOTES
1. WELD SOCKET 2 1/2" X 2" DEEP TO 1" SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 10'.
2. CITY OF AUSTIN STANDARD VALVE CASTING RING C-6 & LID C-7 OR C-5A LID IN UNPAVED AREAS. SEE VALVE CASTING DETAIL.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18 AND 24" FROM FINISHED GRADE.
5. CONTRACTOR SHALL SUBMIT VAULT & BASE DESIGN SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

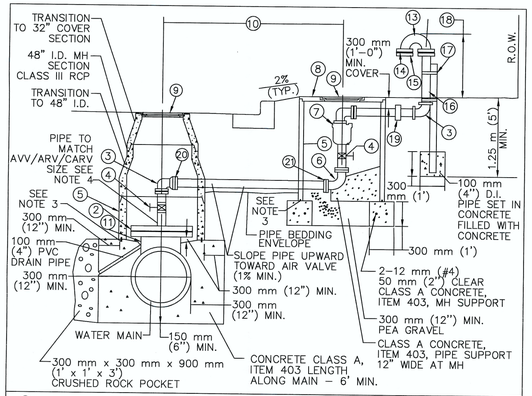


BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

SPECIAL DETAIL MANHOLE ACCESS AT GATE VALVE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. SD-MH-GV48



(2) INSULATED FLANGE CONNECTION
(3) 90° BEND (MJ X MJ)
(4) GATE VALVE WITH HAND WHEEL (FLG X FLG)
(5) CLASS III R.C.P. MANHOLE SECTIONS 1.524 m (60") MIN. I.D.
(6) 90° BEND (FLG. X FLG.)
(7) COMBINATION AIR RELEASE VALVE
(8) REINFORCED PRECAST CONCRETE LID (AASHTO H-20 LOADING) WITH LIFTING LUGS
(9) C.O.A. RING AND 813 mm (32") COVER EJIW - V1816 2PT FRAME AND V2432-1 APT DI COVER (OR APPROVED EQUAL)
(10) PER PLAN DIMENSION OR AS DETERMINED BY ENGINEER OR DESIGNATED REPRESENTATIVE
(11) 24-INCH FLANGED OUTLET, PER ANSI B16.1
(13) RETURN BEND (FLG X FLG)
(14) NO. 16 MESH BRASS CLOTH
(15) COMPANION FLANGE (SEE NOTE 7)
(16) AIR VENT PIPE
(17) 6 mm X 25 mm (1/4 " X 1") GALV. STRAPS DRILLED TO 100 mm (4") D.I. PIPE FILLED WITH CONCRETE
(18) 1.25 m (5') MIN. (UNDEV. AREAS) 355 mm (14") MAX. (DEV. AREAS) AND > 100-YR FLOOD PLAIN AS INDICATED ON DRAWINGS
(19) FLEXIBLE COUPLING
(20) MJ
(21) FLANGED

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

TYPE II-76 mm (3") OR LARGER VENTED AIR/VACUUM VALVE INSTALLATION UNDER PAVEMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD 511S-2AR 1 OF 2

NOTES:
1. RESERVED
2. AIR VENT PIPE 6" AND LARGER SHALL BE D.I. (CLASS 350 MIN.) PIPE FLANGE FITTINGS ORDERED SPECIAL WITH SHOP APPLIED KOPPER INERTOL RUST INHIBITIVE PRIMER 621, OR EQUAL, IN LIEU OF COAL TAR. EXTERIOR SURFACES OF ALL EXPOSED PIPE SHALL BE PAINTED WITH RUST-OLEUM ACRYLIC 5225 (SAFETY BLUE), OR EQUAL, PER COATING MANUFACTURER'S INSTRUCTIONS PRIOR TO INSTALLATION. AIR VENT PIPE 100mm (4") AND SMALLER SHALL BE GALVANIZED.
3. SEALANT SHALL BE 32 mm (1 1/4 ") FLEXIBLE BUTYL RESIN SEALANT CS-102 AS MANUFACTURED BY CONCRETE SEALANTS, INC. OR EQUAL.
4. ALL PIPING BETWEEN WATER MAIN OUTLET AND AVV/ARV/CARV IS TO BE RESTRAINED BY FLANGES WHERE INDICATED, OR FACTORY RESTRAINED JOINTS OR NPT THREADS. PROVIDE 4-INCH MINIMUM AS NECESSARY.
5. AIR VENT PIPE INSTALLATION SHALL BE AS NEAR AS PRACTICAL TO THE RIGHT-OF-WAY LINE.
6. CONCRETE MANHOLE PENETRATIONS SHALL BE CORE BIT DRILLED. VOID SHALL BE FILLED BY PRESSING SEAL GASKET CORP. PSX RESILIENT CONNECTOR MEETING ASTM C923 OR APPROVED EQUAL.
7. CROSS SECTIONAL AREA OF OPENING TO BE EQUAL TO OR GREATER THAN CROSS SECTIONAL AREA OF AIR VENT PIPE.
8. AIR/VACUUM VALVE SHALL BE INSTALLED IN A MANNER WHICH WILL ALLOW REMOVAL OF ASSEMBLY WITHOUT REMOVAL OF PRECAST CONCRETE LID.
9. WHERE RING AND COVERS ARE LOCATED WITHIN PEDESTRIAN AREAS, AN OVERLAY BY CRAYCO, OR APPROVED EQUAL SHALL BE APPLIED, PER MANUFACTURERS RECOMMENDATION.

AIR VALVE	GATE VALVE	VENT PIPE (MIN.)	M.H. DIA. (MIN.)
152 mm (6")	152 mm (6")	152 mm (6")	1.829 m (6')

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

TYPE II-76 mm (3") OR LARGER VENTED AIR/VACUUM VALVE INSTALLATION UNDER PAVEMENT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD 511S-2AR 2 OF 2

REVIEWED
JUN 13 2016
Austin Water Utility

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 18 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

WATER DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

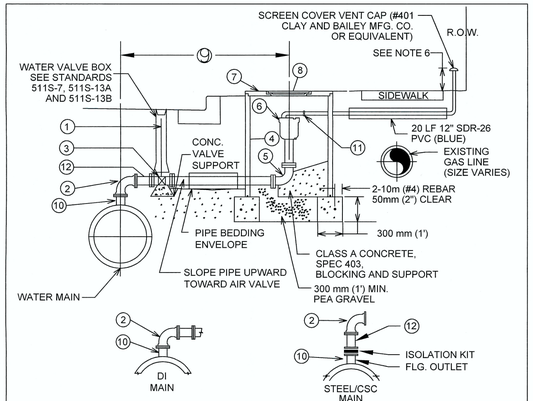
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 18 OF 45

G:\106960\10026\CD DWG\106960026WW06.dwg modified by jthompson on Apr 25, 16 4:53 PM

SP-2015-0337D



DEVELOPED AREAS ONLY

1. VALVE STEM EXTENSION
2. 90° BEND WITH FACTORY RESTRAINED JOINT BELL ENDS, SPL WW-27F
3. GATE VALVE (FLG x FLG). GATE VALVE SHALL NOT BE INSTALLED DIRECTLY ABOVE MAIN.
4. CLASS III R.C.P. VAULT 1.524 m (60") MIN. I.D.
5. 90° BEND (FLG x FLG)
6. COMBINATION AIR RELEASE VALVE WITH GOOSENECK PER SPL WW-367 OR WW-462A
7. REINFORCED PRECAST CONCRETE LID (AASHTO H-20 LOADING)
8. C.O.A. RING AND 813 mm (32") COVER. SEE STD. DETAIL 503S-6W (MODIFY LETTERING TO WATER)
9. PER PLAN DIMENSION, OR AS DETERMINED BY LICENSED ENGINEER OR AUSTIN WATER UTILITY.
10. FOR STEEL/CSC MAIN: WELDED-ON FLANGED OUTLET WITH ISOLATION KIT AND FLG x FACTORY RESTRAINED SPIGOT END.

    OR

    FOR DI MAIN: WELDED-ON OUTLET WITH FACTORY RESTRAINED JOINT SPIGOT END.
11. BOLTED CAST COUPLING (SMITH-BLAIR 441 OMNI CAST COUPLING OR APPROVED EQUIVALENT)
12. PIPE FLG x FACTORY RESTRAINED JOINT SPIGOT END.

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

TYPE II–76 3" OR LARGER VENTED AIR/VACUUM VALVE WITH PVC INSULATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD 511S–2–IP
1 OF 2

NOTES:

1. **ON 250 mm (10") AND LARGER TWO PIECE COMBINATION AIR VALVES, THE OUTLET PIPING OF THE SMALL VALVE SHALL BE VENTED WITHIN THE VAULT INTO THE LARGER VENT PIPE**
2. **AIR VENT PIPE 150 mm (6") AND LARGER SHALL BE D.I. (CLASS 350 MIN.) PIPE FLANGE FITTINGS AND EXTERIOR SURFACES OF ALL EXPOSED PIPE SHALL BE PAINTED PER SPL WW-3C. POTABLE WATER PIPE SHALL BE SAFETY BLUE. SURFACE PREPARATION SHALL BE PER PAINT MANUFACTUR'S REQUIREMENTS.**
3. **AIR VENT PIPE INSTALLATION SHALL BE AS NEAR AS PRACTICAL TO THE RIGHT-OF-WAY LINE.**
4. **CONCRETE PIPE PENETRATIONS SHALL BE CORE BIT DRILLED. VOID SHALL BE SEALED W/LINKSEAL LS 300 OR APPROVED EQUAL.**
5. **AIR/VACUUM VALVE SHALL BE INSTALLED IN A MANNER WHICH WILL ALLOW REMOVAL OF ASSEMBLY WITHOUT REMOVAL OF PRECAST CONCRETE LID.**
6. **THE AIR RELEASE SHALL BE 200mm (8") TO 300mm (12") IN HEIGHT AND LOCATED NOT TO CONFLICT WITH SIDEWALK, DRIVEWAY, OR OTHER PEDESTRIAN TRAFFIC.**

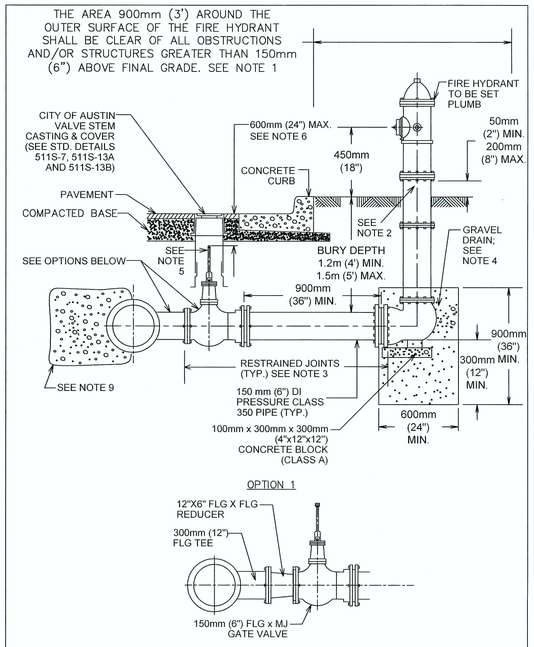
AIR VALVE	GATE VALVE	VENT PIPE (MIN.)	VAULT DIA. (MIN.)
76 mm (3")	76 mm (3")	76 mm (3")	1.524 m (5')
102 mm (4")	102 mm (4")	102 mm (4")	1.829 m (6')
152 mm (6")	152 mm (6")	152 mm (6")	1.829 m (6')
203 mm (8")	203 mm (8")	203 mm (8")	1.829 m (6')
254 mm (10")	254 mm (10")	254 mm (10")	2.134 m (7')
305 mm (12")	305 mm (12")	305 mm (12")	2.134 m (7')

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

TYPE II–76 3" OR LARGER VENTED AIR/VACUUM VALVE WITH PVC INSULATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD 511S–2–IP
2 OF 2



BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

MODIFIED FIRE HYDRANT INSTALLATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. SD–511S–17–MOD
1 OF 2

NOTES:

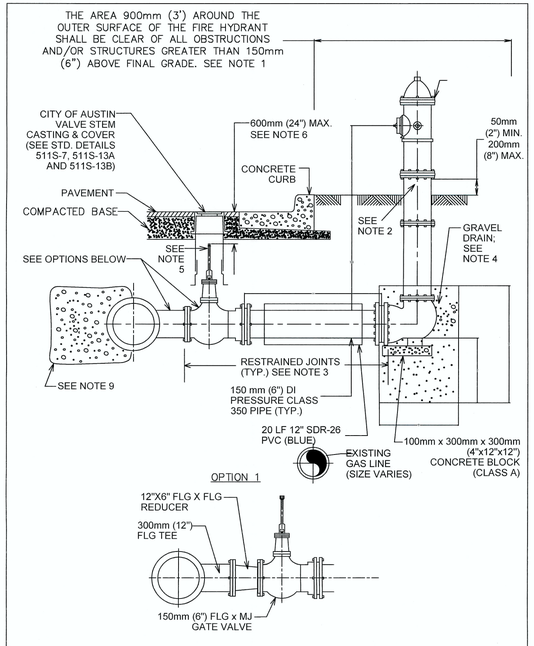
1. DIMENSION FROM GUTTER FACE OF CURB TO OUTERMOST PART OF ANY NOZZLE CAP SHALL BE NOT LESS THAN 0.9m (3'), NOR MORE THAN 1.8m (6'). NO PART OF A HYDRANT OR ITS NOZZLE CAPS SHALL BE WITHIN 150mm (6") OF ANY SIDEWALK OR PEDESTRIAN RAMP. ANY FIRE HYDRANT PLACED NEAR A STREET CORNER SHALL BE LOCATED OUTSIDE THE CURVE RADIUS AND A MINIMUM OF 1.2m (4') FROM RAMPS.
2. ONE BARREL EXTENSION NOT EXCEEDING 600 mm (2') LENGTH MAY BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF 1.2m TO 1.5m (4' TO 5'). BREAK AWAY BOLTS (SHOE TYPES) SHALL BE PROPERLY SPACED AND PLACED WHEN EXTENSIONS ARE NEEDED TO ACCOMMODATE FIRE HYDRANTS. SEE STD. DETAIL 511S-17A FOR FIRE HYDRANTS ON DEEP WATER MAINS.
3. FIRE LINE SHALL HAVE ALL JOINTS RESTRAINED FROM MAIN TO FIRE HYDRANT. JOINTS SHOWN MAY VARY. SEE SPL WW-27, WW-27A, AND WW-27B FOR RESTRAINT OPTIONS.
4. BELOW EACH HYDRANT, A DRAINAGE PIT 0.6m (2') IN DIAMETER AND 0.3m (1') DEEP SHALL BE EXCAVATED AND FILLED WITH COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH COARSE SAND UNDER AND AROUND THE BOWL OF THE HYDRANT, AND TO A LEVEL 150mm (6") ABOVE THE HYDRANT DRAIN OPENING (SEE STD. SPEC. 510). THE HYDRANT DRAINAGE PIT SHALL NOT BE CONNECTED TO A SANITARY SEWER. THE DRAIN GRAVEL SHALL BE COVERED WITH FILTER FABRIC TO PREVENT BLOCKAGE OF VOIDS IN THE GRAVEL BY MIGRATION OF BACKFILL MATERIAL. THE BOWL OF EACH HYDRANT SHALL BE WELL BRACED AGAINST UNEXCAVATED EARTH AT THE END OF THE TRENCH TAKING CARE NOT TO OBSTRUCT THE HYDRANT DRAIN HOLES, IF THE HYDRANT LEAD IS NOT RESTRAINED TO THE MAIN.
5. WELD SOCKET 64mm x 51mm (2-1/2" x 2") TO 25mm (1") SCH. 40 ROUND STEM EXTENSION, FIT ON OPERATING NUT. USE SCH. 80 ROUND STEM EXTENSION FOR LENGTHS OVER 3m (10'). VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE OF REQUIRED LENGTH WITH A SOCKET ON ONE END AND A NUT ON THE OTHER.
6. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE STEM EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 AND 600 mm (18" AND 24") FROM FINISHED GRADE.
7. FOR FIRE HYDRANT LEADS AT A MAIN OUTLET LARGER THAN 150mm (6") DIAMETER, OUTLET SHALL BE FLANGED AND A FLANGE x FLANGE REDUCER SHALL BE INSTALLED DIRECTLY ON THE OUTLET (SEE OPTION 1).
8. WRAP 8 mil POLY-FILM WRAP ON ALL BURIED PIPE AND FITTINGS.
9. THRUST BLOCKING REQUIRED FOR PIPE SIZE & SOIL CONDITION (SEE STD. DETAIL 510-6)

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

MODIFIED FIRE HYDRANT INSTALLATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. SD–511S–17–MOD
2 OF 2



BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

MODIFIED FIRE HYDRANT INSTALLATION AT GAS LINE CROSSING

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD–511S–17–IP
1 OF 2

NOTES:

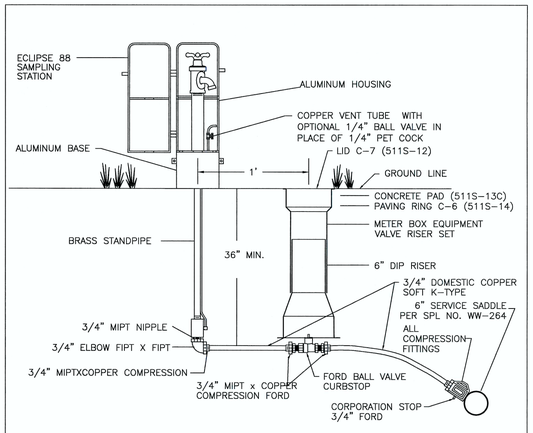
1. DIMENSION FROM GUTTER FACE OF CURB TO OUTERMOST PART OF ANY NOZZLE CAP SHALL BE NOT LESS THAN 0.9m (3'), NOR MORE THAN 1.8m (6'). NO PART OF A HYDRANT OR ITS NOZZLE CAPS SHALL BE WITHIN 150mm (6") OF ANY SIDEWALK OR PEDESTRIAN RAMP. ANY FIRE HYDRANT PLACED NEAR A STREET CORNER SHALL BE LOCATED OUTSIDE THE CURVE RADIUS AND A MINIMUM OF 1.2m (4') FROM RAMPS.
2. ONE BARREL EXTENSION NOT EXCEEDING 600 mm (2') LENGTH MAY BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF 1.2m TO 1.5m (4' TO 5'). BREAK AWAY BOLTS (SHOE TYPES) SHALL BE PROPERLY SPACED AND PLACED WHEN EXTENSIONS ARE NEEDED TO ACCOMMODATE FIRE HYDRANTS. SEE STD. DETAIL 511S-17A FOR FIRE HYDRANTS ON DEEP WATER MAINS.
3. FIRE LINE SHALL HAVE ALL JOINTS RESTRAINED FROM MAIN TO FIRE HYDRANT. JOINTS SHOWN MAY VARY. SEE SPL WW-27, WW-27A, AND WW-27B FOR RESTRAINT OPTIONS.
4. BELOW EACH HYDRANT, A DRAINAGE PIT 0.6m (2') IN DIAMETER AND 0.3m (1') DEEP SHALL BE EXCAVATED AND FILLED WITH COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH COARSE SAND UNDER AND AROUND THE BOWL OF THE HYDRANT, AND TO A LEVEL 150mm (6") ABOVE THE HYDRANT DRAIN OPENING (SEE STD. SPEC. 510). THE HYDRANT DRAINAGE PIT SHALL NOT BE CONNECTED TO A SANITARY SEWER. THE DRAIN GRAVEL SHALL BE COVERED WITH FILTER FABRIC TO PREVENT BLOCKAGE OF VOIDS IN THE GRAVEL BY MIGRATION OF BACKFILL MATERIAL. THE BOWL OF EACH HYDRANT SHALL BE WELL BRACED AGAINST UNEXCAVATED EARTH AT THE END OF THE TRENCH TAKING CARE NOT TO OBSTRUCT THE HYDRANT DRAIN HOLES, IF THE HYDRANT LEAD IS NOT RESTRAINED TO THE MAIN.
5. WELD SOCKET 64mm x 51mm (2-1/2" x 2") TO 25mm (1") SCH. 40 ROUND STEM EXTENSION, FIT ON OPERATING NUT. USE SCH. 80 ROUND STEM EXTENSION FOR LENGTHS OVER 3m (10'). VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE OF REQUIRED LENGTH WITH A SOCKET ON ONE END AND A NUT ON THE OTHER.
6. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE STEM EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 AND 600 mm (18" AND 24") FROM FINISHED GRADE.
7. FOR FIRE HYDRANT LEADS AT A MAIN OUTLET LARGER THAN 150mm (6") DIAMETER, OUTLET SHALL BE FLANGED AND A FLANGE x FLANGE REDUCER SHALL BE INSTALLED DIRECTLY ON THE OUTLET (SEE OPTION 1).
8. WRAP 8 mil POLY-FILM WRAP ON ALL BURIED PIPE AND FITTINGS.
9. THRUST BLOCKING REQUIRED FOR PIPE SIZE & SOIL CONDITION (SEE STD. DETAIL 510-6)

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

MODIFIED FIRE HYDRANT INSTALLATION AT GAS LINE CROSSING

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD–511S–17–IP
2 OF 2



NOTES:

1. SAMPLING STATIONS SHALL BE 36" BURY, WITH A 3/4" FIP INLET, AND A (3/4" HOSE OR UNTHREADED) NOZZLE.
2. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NONREMOVABLE, ALUMINUM–CAST HOUSING.
3. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.
4. ALL WORKING PARTS WILL ALSO BE OF BRASS AND BE REMOVABLE FROM ABOVE GROUND WITH NO DIGGING. EXTERIOR PIPING SHALL BE BRASS OR GALVANIZED.
5. A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.
6. ECLIPSE NO. 88 SAMPLING STATION SHALL BE MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO 63102 OR APPROVED EQUAL..

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

SAMPLE PORT

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

SD–SP–510
1 OF 1

REVIEWED
JUN 13 2016
George Reseed
Austin Water Utility

NOTES:

1. DIMENSION FROM GUTTER FACE OF CURB TO OUTERMOST PART OF ANY NOZZLE CAP SHALL BE NOT LESS THAN 0.9m (3'), NOR MORE THAN 1.8m (6'). NO PART OF A HYDRANT OR ITS NOZZLE CAPS SHALL BE WITHIN 150mm (6") OF ANY SIDEWALK OR PEDESTRIAN RAMP. ANY FIRE HYDRANT PLACED NEAR A STREET CORNER SHALL BE LOCATED OUTSIDE THE CURVE RADIUS AND A MINIMUM OF 1.2m (4') FROM RAMPS.
2. ONE BARREL EXTENSION NOT EXCEEDING 600 mm (2') LENGTH MAY BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF 1.2m TO 1.5m (4' TO 5'). BREAK AWAY BOLTS (SHOE TYPES) SHALL BE PROPERLY SPACED AND PLACED WHEN EXTENSIONS ARE NEEDED TO ACCOMMODATE FIRE HYDRANTS. SEE STD. DETAIL 511S-17A FOR FIRE HYDRANTS ON DEEP WATER MAINS.
3. FIRE LINE SHALL HAVE ALL JOINTS RESTRAINED FROM MAIN TO FIRE HYDRANT. JOINTS SHOWN MAY VARY. SEE SPL WW-27, WW-27A, AND WW-27B FOR RESTRAINT OPTIONS.
4. BELOW EACH HYDRANT, A DRAINAGE PIT 0.6m (2') IN DIAMETER AND 0.3m (1') DEEP SHALL BE EXCAVATED AND FILLED WITH COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH COARSE SAND UNDER AND AROUND THE BOWL OF THE HYDRANT, AND TO A LEVEL 150mm (6") ABOVE THE HYDRANT DRAIN OPENING (SEE STD. SPEC. 510). THE HYDRANT DRAINAGE PIT SHALL NOT BE CONNECTED TO A SANITARY SEWER. THE DRAIN GRAVEL SHALL BE COVERED WITH FILTER FABRIC TO PREVENT BLOCKAGE OF VOIDS IN THE GRAVEL BY MIGRATION OF BACKFILL MATERIAL. THE BOWL OF EACH HYDRANT SHALL BE WELL BRACED AGAINST UNEXCAVATED EARTH AT THE END OF THE TRENCH TAKING CARE NOT TO OBSTRUCT THE HYDRANT DRAIN HOLES, IF THE HYDRANT LEAD IS NOT RESTRAINED TO THE MAIN.
5. WELD SOCKET 64mm x 51mm (2-1/2" x 2") TO 25mm (1") SCH. 40 ROUND STEM EXTENSION, FIT ON OPERATING NUT. USE SCH. 80 ROUND STEM EXTENSION FOR LENGTHS OVER 3m (10'). VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE OF REQUIRED LENGTH WITH A SOCKET ON ONE END AND A NUT ON THE OTHER.
6. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE STEM EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 AND 600 mm (18" AND 24") FROM FINISHED GRADE.
7. FOR FIRE HYDRANT LEADS AT A MAIN OUTLET LARGER THAN 150mm (6") DIAMETER, OUTLET SHALL BE FLANGED AND A FLANGE x FLANGE REDUCER SHALL BE INSTALLED DIRECTLY ON THE OUTLET (SEE OPTION 1).
8. WRAP 8 mil POLY-FILM WRAP ON ALL BURIED PIPE AND FITTINGS.
9. THRUST BLOCKING REQUIRED FOR PIPE SIZE & SOIL CONDITION (SEE STD. DETAIL 510-6)

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

MODIFIED FIRE HYDRANT INSTALLATION

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. SD–511S–17–MOD
2 OF 2

APPROVAL | REVISION | DATE | NO.

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500
Copyright © 2016

STATE OF TEXAS
ALDO J. SOTELO
106323
LICENSED
PROFESSIONAL ENGINEER
5/6/16

WATER DETAILS

INDIAN HILLS 48-INCH
WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 &
CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJS
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 19 OF 45

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 9 of 12
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

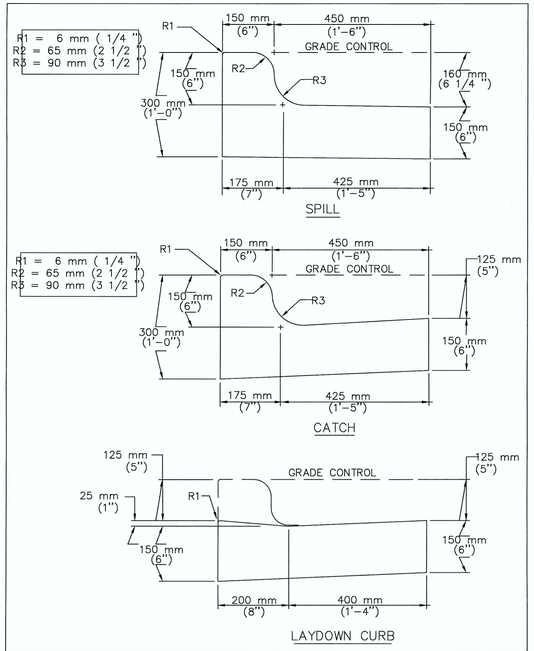
Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

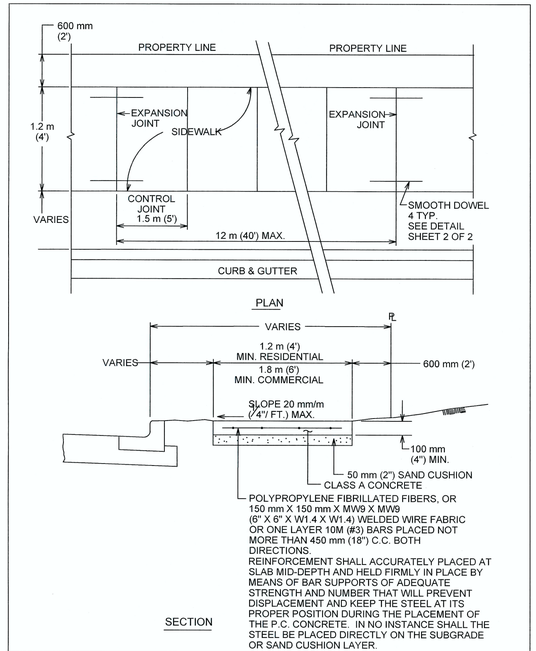
FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

G:\106960\10026\CD DWG\106960026WWD07.dwg modified by jthompsen on Apr 26, 16 10:13 AM

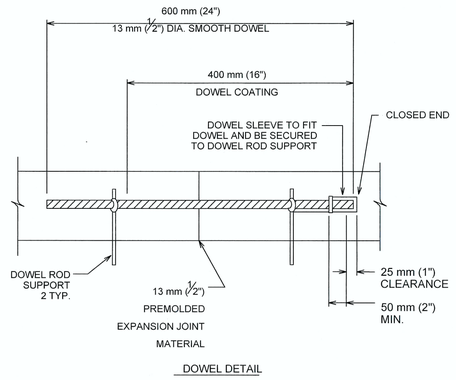
SP-2015-0337D



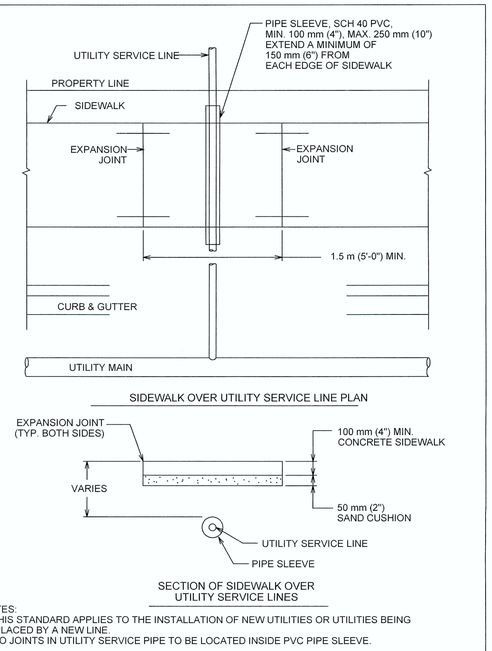
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION		CURB AND GUTTER SECTION	
RECORD COPY SIGNED BY LINO RIVERA	*9/29/99* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 430S-1



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 3

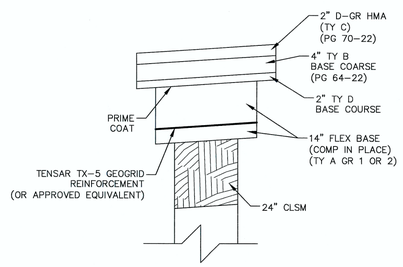


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 3



NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3



PERMANENT PAVEMENT RESTORATION DETAIL

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 20 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

5-16-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED
PROFESSIONAL ENGINEER
Stephanie D Blew

PAVEMENT DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

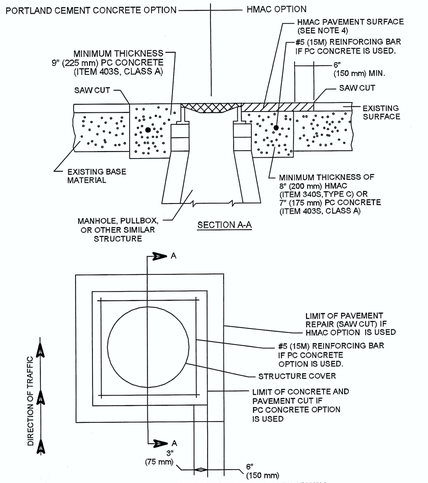
DRAWN BY: JT
DESIGNED BY: SB
REVIEWED BY: AG
PROJECT NO.: R010696010026

SHEET 20 OF 45

G:\106960\10026\CD DWG\106960026PVD01.dwg modified by jthompson on May 2, 16 2:21 PM

SP-2015-0337D

MISCELLANEOUS REPAIRS AROUND UTILITY CASTINGS (UCM SECTION 5.8.3)

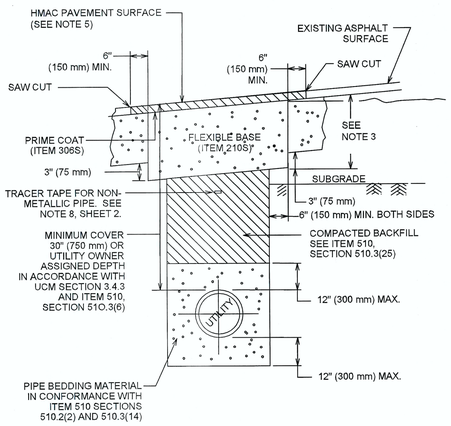


NOTES:

1. IF PC CONCRETE IS USED AROUND THE MANHOLE, THE CONCRETE SHALL BE REINFORCED WITH #5 (15M) BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO EDGE OF SAW CUT PAVEMENT EDGE.
2. REQUIREMENTS FOR NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENTS IN NEW, RECONSTRUCTION AND REPAVING PROJECTS ARE INCLUDED IN STANDARD NO. 506S-4 AND 506S-4A.
3. REQUIREMENTS FOR WATER VALVE ADJUSTMENTS ARE INCLUDED IN STANDARD DETAILS 511S-13A AND 511S-13B.
4. REPLACEMENT HMAC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS. SEE ITEM 340S, SECTION 340S.4.
5. REFER TO UCM SECTION 5.8.3 FOR ADDITIONAL BACKFILL REQUIREMENTS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CASTING ADJUSTMENT	
RECORD COPY SIGNED BY SAM ANGOORI 01/04/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-1

TRENCH REPAIR IN ASPHALTIC SURFACE OVER FLEXIBLE BASE
(UCM SECTION 5.8.0)



	FLEXIBLE BASE WITH ASPHALT SURFACE TRENCH REPAIR-EXISTING PAVEMENT	
ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-2 1 OF 2

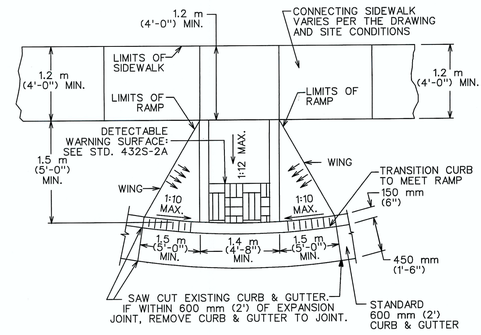
NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE, A MINIMUM OF 12" (300 mm) WIDER THAN UNDISTURBED SIDES OF THE TRENCH AND SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX AC OR TEMPORARY HMAC. TEMPORARY MIX SHALL BE PLACED OVER FLEXIBLE BASE.
3. ROAD BASE SHALL BE REPLACED IN KIND WITH BASE THICKNESS EQUAL TO EXISTING BASE THICKNESS PLUS 3" (75 mm), BUT IN NO CASE LESS THAN 12" (300 mm).
4. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE THICKNESS OF 10" (250 mm) OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
5. REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS.

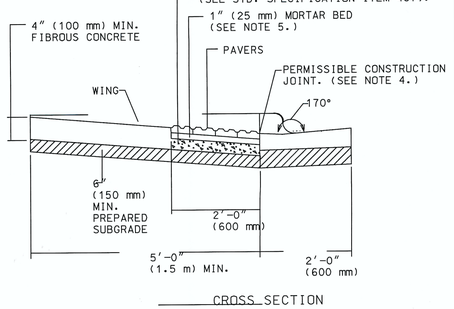
SEE ITEM 340S, SECTION 340S.4

6. CLASS "J" PC CONCRETE (ITEM 403S) OR CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE SUBSTITUTED IN THESE REPAIRS FOR THE FLEXIBLE BASE AND COMPACTED BACKFILL. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
7. TACK COAT ALL EXPOSED EDGES AND SURFACES (SPEC ITEM 307S).
8. AS PER CITY OF AUSTIN STANDARD SPECIFICATION 510, SECTION 510.2(8)(K)5, FOR ALL NON-METALLIC PIPE, DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND A MINIMUM OF 12" (300 mm) BELOW THE SUBGRADE, OR A MINIMUM OF 18" (450 mm) BELOW FINISHED GRADE ON AREAS OUTSIDE THE LIMITS OF PAVEMENT, SHALL BE PLACED INDUCTIVE TRACER TAPE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.

	FLEXIBLE BASE WITH ASPHALT SURFACE TRENCH REPAIR-EXISTING PAVEMENT	
ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-2 2 OF 2



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE 1 SIDEWALK CURB RAMP	
RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-5

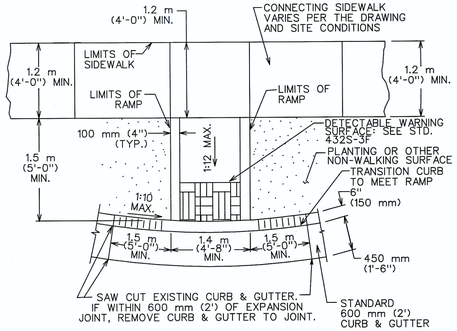


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	DETECTABLE WARNING-PAVER (CITY PROPERTY/EASEMENTS)	
RECORD COPY SIGNED BY BILL GARDNER 06/21/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-2A 1 OF 2

GENERAL NOTES:

1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION ON CITY PROPERTY AND EASEMENT AREAS ONLY.
2. PAVERS ARE REQUIRED FOR ALL CURB RAMP INSTALLATIONS.
3. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9" (23 mm), A NOMINAL HEIGHT OF 0.2" (5 mm) AND A NOMINAL CENTER TO CENTER SPACING OF 2.35" (60 mm) AND SHALL CONSTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (Re: ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. PAVER PATTERN SHALL BE BASKET WEAVE UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
4. TYPICAL SIDEWALK WIDTHS AND CURB RADII ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADII AND CURB BASIS.
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO ¼" (6 mm) JOINT SIZE. GAPS LARGER THAN ¼" (6 mm) MUST BE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. ALL JOINTS BETWEEN BRICKS AND ADJOINING SURFACE SHALL BE MORTAR FILLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
6. MORTAR SHALL CONFORM TO STD. SPECIFICATION ITEM SECTION 403S.3.5, MORTAR AND GROUT. ALL OTHER CONCRETE SHALL CONFORM TO STD. SPECIFICATION ITEM 403S, CONCRETE FOR STRUCTURES, UNLESS OTHERWISE NOTED.
7. CURB RAMPS WITH RETURNED CURB MAY ONLY BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK DIAGONALLY ACROSS THE RAMP.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	DETECTABLE WARNING-PAVER (CITY PROPERTY/EASMENTS)	
RECORD COPY SIGNED BY BILL GARDNER 06/21/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-2A 2 OF 2



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE 1B SIDEWALK CURB RAMP	
RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-5B

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 21 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81.LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

APPROVAL | REVISION | NO. | DATE

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500

Copyright © 2016

5-6-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED PROFESSIONAL ENGINEER
Stephanie D Blew

PAVEMENT DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT | DESIGNED BY: SB | REVIEWED BY: AG | PROJECT NO.: R010696010026

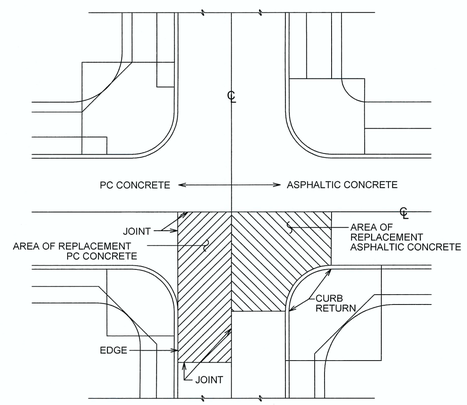
SHEET 21 OF 45

G:\10696010\10026\CD DWG\10696010026PVD02.dwg modified by jthompson on May 4, 16 10:46 AM

SP-2015-0337D

REPAIR OF NEW STREETS and ARTERIAL STREETS in GOOD CONDITION
(UCM SECTION 5.3.3 and 5.3.4)

TYPICAL RESTORATION FOR EXCAVATION IN INTERSECTIONS



TYPICAL PLAN

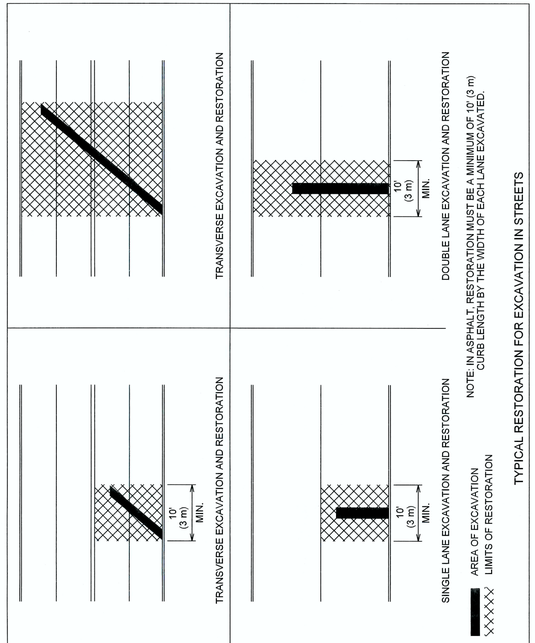
TRENCH REPAIRS WITHIN PORTLAND CEMENT CONCRETE PAVEMENTS NOTE:

IF ANY PART OF THE TRENCH REPAIR FALLS WITHIN AN INTERSECTION, THEN THE ENTIRE CONCRETE SLAB FROM JOINT TO JOINT AND JOINT TO EDGE SHALL BE REPLACED, UNLESS OTHERWISE DIRECTED IN WRITING BY THE DIRECTOR.

TRENCH REPAIRS WITHIN ASPHALTIC CONCRETE PAVEMENTS NOTES:

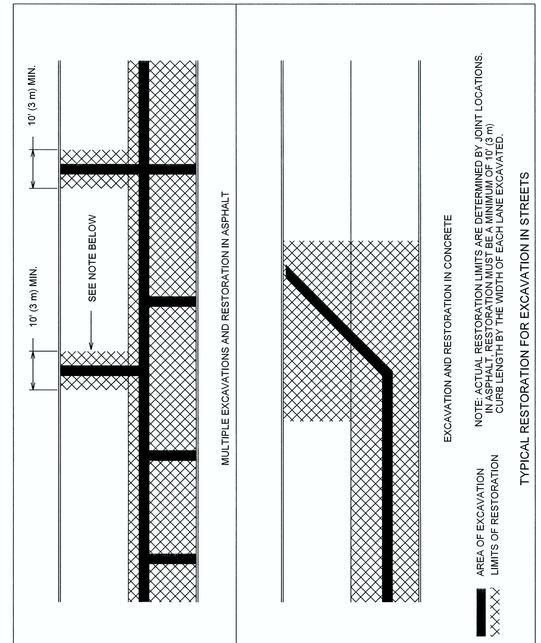
1. IF ANY PART OF THE TRENCH REPAIR FALLS WITHIN AN INTERSECTION, DEFINED FROM CURB RETURN TO CURB RETURN, THE ENTIRE QUADRANT OF THE EXISTING SURFACE SHALL BE REPLACED, UNLESS OTHERWISE DIRECTED IN WRITING BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
2. A QUADRANT IS DEFINED AS THE CROSS-HATCHED AREA IN THE ABOVE DETAIL.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STREET REPAIR REQUIREMENTS	
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-7 1 OF 3



TYPICAL RESTORATION FOR EXCAVATION IN STREETS

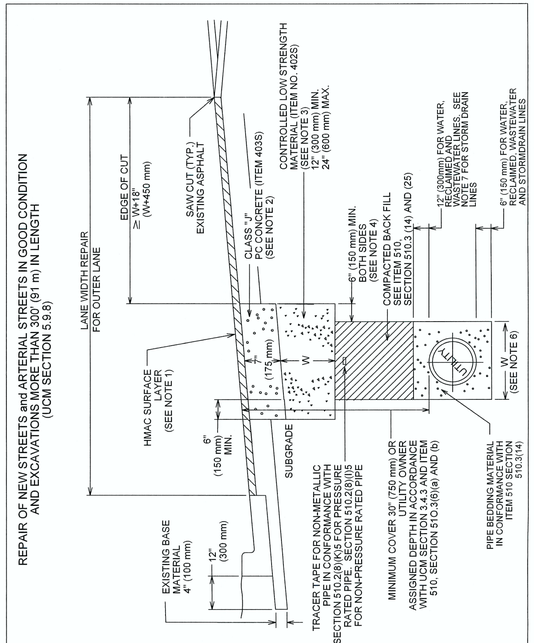
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STREET REPAIR REQUIREMENTS	
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-7 2 OF 3



TYPICAL RESTORATION FOR EXCAVATION IN STREETS

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STREET REPAIR REQUIREMENTS	
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-7 3 OF 3

REPAIR OF NEW STREETS and ARTERIAL STREETS IN GOOD CONDITION
AND EXCAVATIONS MORE THAN 300' (91 m) IN LENGTH
(UCM SECTION 5.9.8)



TYPICAL RESTORATION FOR EXCAVATION IN STREETS

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC LANE REPLACEMENT FOR OUTER LANE EXCAVATIONS	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-8A 1 OF 2

NOTES:

1. REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS.
   SEE ITEM 340S, SECTION 340S.4.
2. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
3. CLASS "J" (2 SACK MIX) MAY BE SUBSTITUTED FOR CONTROLLED LOW STRENGTH MATERIAL, IF APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
4. FOR TRENCH WIDTHS 6" (150 mm) OR LESS, WIDENING OF THE BASE BEYOND THE TRENCH FACE MAY BE ELIMINATED IF THE EXISTING PAVEMENT STRUCTURE (INCLUDING THE BASE) REMAINS INTACT AND STABLE AFTER COMPLETION OF EXCAVATION.
5. TACK COAT (ITEM 307S) ALL EXPOSED EDGES AND SURFACES.
6. FOR WATER, RECLAIMED AND WASTEWATER LINE TRENCHES REFER TO 510.3(5) W=TRENCH WIDTH.
7. FOR STORM DRAINS, THE PIPE BEDDING ENVELOPE SHALL EXTEND THE FULL TRENCH WIDTH TO A DEPTH OF 6" (150 mm) BELOW THE PIPE, AND SHALL RISE AT LEAST TO THE SPRING LINE OF THE PIPE. THE DESIGN OF STORM DRAIN PIPES SUBJECTED TO VEHICULAR TRAFFIC OR OTHER LOADING SHALL BE SUPPORTED BY STRUCTURAL ENGINEERING CALCULATIONS OR REFERENCED TO ENGINEERING STANDARDS. IN ADDITION TO THE PIPE SELECTION, THE DESIGN INCLUDES THE PIPE BEDDING ENVELOPE, DEPTH OF COVER AND COMPACTION REQUIREMENTS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC LANE REPLACEMENT FOR OUTER LANE EXCAVATIONS	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-8A 2 OF 2

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 22 of 45.
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2015

5/6/2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED
PROFESSIONAL ENGINEER
Stephanie D Blew

PAVEMENT DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: SB
REVIEWED BY: AG
PROJECT NO.: R010696010026

SHEET 22 OF 45

G:\106960\10026\CD DWG\106960026PVD03.dwg modified by jthompson on Jul 27, 15 11:55 AM

SP-2015-0337D

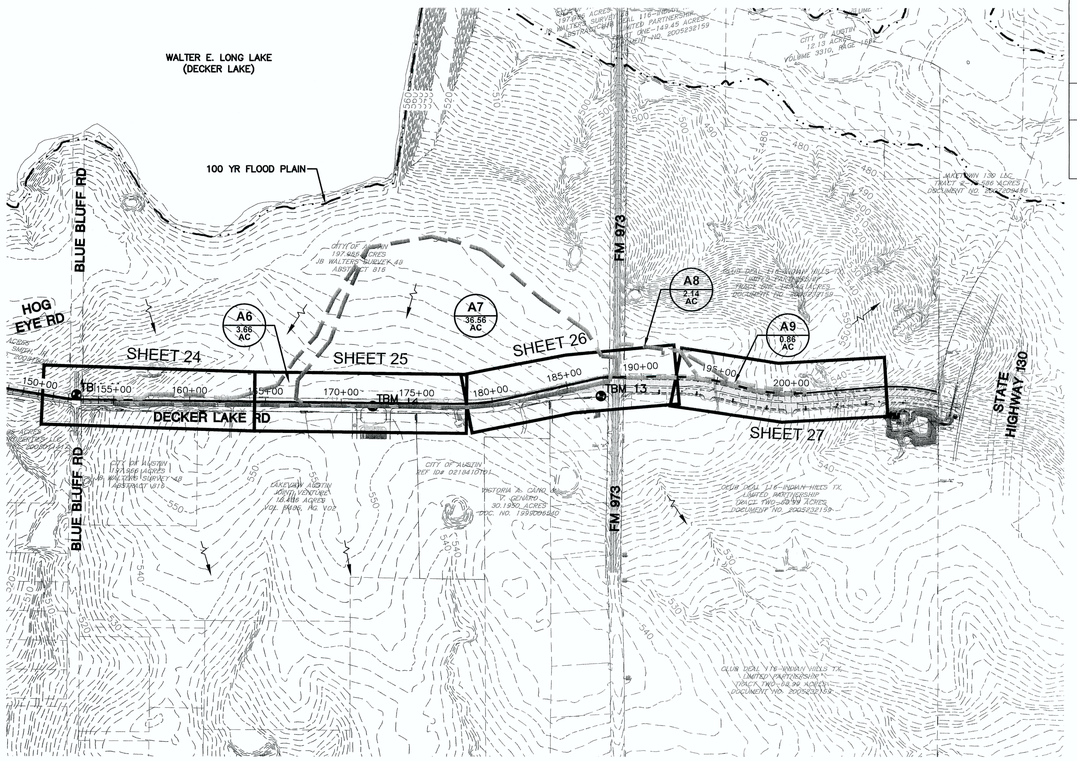
SUB DRAINAGE AREA		TEMPORARY EROSION CONTROL BMP'S FOR LOCAL DRAINAGE			
NAME	ACREAGE	BMP	STA NO.	SLOPE	CATEGORY OF CONTROL
A6-A	0.24	22 LF Silt Fence J hook	158+00	50:1-30:1	Control Stormwater flowing onto and through the project
A6-B	0.19	22LF Silt Fence J hook	161+00	100:1-50:1	Control Stormwater flowing onto and through the project
A6-C	0.31	21 LF Silt Fence J hook	167+27	100:1-50:1	Control Stormwater flowing onto and through the project
A6-D	0.13	22 LF Silt Fence J hook, 34 LF Rock Berm	155+00	50:1-30:1	Control Stormwater flowing onto and through the project
		199 LF Silt Fence	155+00-157+00		Control Stormwater flowing through the project
A6-E	0.09	50 LF Rock Berm and 92 LF Silt Fence	155+35	50:1-30:2	Control Stormwater flowing onto and through the project
A7-A	0.15	21 LF Silt Fence J hook	169+27	100:1-50:1	Control Stormwater flowing onto and through the project
A7-B	0.21	29 LF Silt Fence J hook	172+00	100:1-50:1	Control Stormwater flowing onto and through the project
A7-C	4.34	140 LF Fabric Cover Rock Berm	172+92	100:1-50:1	Control Stormwater flowing onto and through the project
A7-D	0.28	35 LF of Rock Berm	173+79	100:1-50:1	Protect Storm Drain Inlets
A7-E	0.22	25 LF Silt Fence J hook	175+00	100:1-50:1	Control Stormwater flowing onto and through the project and Establish Perimeter Controls and Sediment Barriers
A7-F	11.89	36 LF Rock Berm, 972 LF Silt Fence	177+70	50:1-100:1	Protect Storm Drain Inlets/Culverts
A7-G	0.09	22 LF Rock Berm	179+00	50:1-100:1	Protect Storm Drain Inlets/Culverts
A7-H	0.26	36 LF Silt Fence J hook	180+10	50:1-30:1	Control Stormwater flowing onto and through the project
A7-I	0.19	32 LF Silt Fence J hook	183+00	50:1-30:1	Control Stormwater flowing onto and through the project
A7-J	0.12	36 LF Rock Berm	184+60	100:1-50:1	Protect Storm Drain Inlets/Culverts
	0.12	130 LF Silt Fence	177+60-179+00	100:1-50:1	Control Stormwater flowing onto and through the project
A7-K	0.17	15 LF Rock Berm	184+60	100:1-50:1	Protect Storm Drain Inlets/Culverts
A7-L	0.18	17 LF Silt Fence J hook	186+25	100:1-50:1	Control Stormwater flowing onto and through the project and Establish Perimeter Controls and Sediment Barriers
A8-A	0.25	894 LF of Silt Fence, 124 LF of TFD	189+00-194+00	100:1-50:1	Control Stormwater flowing onto and through the project and Establish Perimeter Controls and Sediment Barriers
A9-A	0.12	174 LF Silt Fence and J hook, 62 LF of TFD	195+40	100:1-50:1	Control Stormwater flowing onto and through the project and Establish Perimeter Controls and Sediment Barriers
A9-B	0.41	34 LF Rock Berm and 34 LF Silt Fence, 186 LF of TFD	201+01	30:1 to 25:1	Control Stormwater flowing onto and through the project and Establish Perimeter Controls and Sediment Barriers

OFFSITE DRAINAGE AREA		TEMPORARY EROSION CONTROL BMP'S FOR OFFSITE DRAINAGE			
NAME	ACREAGE	BMP	STA NO.	SLOPE	CATEGORY OF CONTROL
A6-O1	2.70	1491 LF Silt Fence	155+00 - 167+36	25:1-100:1	Establish Perimeter Controls and Sediment Barriers
A7-O1	10.48	564 LF Silt Fence	167+36-172+91	50:1-100:1	Establish Perimeter Controls and Sediment Barriers
A7-O2	7.87	330 LF Silt Fence	174+36-177+62	50:1-100:1	Establish Perimeter Controls and Sediment Barriers
A8-O1	1.89	503 LF Silt Fence	189+00-193+37	30:1-50:1	Establish Perimeter Controls and Sediment Barriers
A9-O1	0.34	980 LF Silt Fence	193+78-201+00	50:1-100:1	Establish Perimeter Controls and Sediment Barriers

NOTES:
1. CONTRACTOR SHALL ADJUST LOCATIONS OF CONTROLS CROSSING THE TRENCH AS CONSTRUCTION PROGRESSES. THE REMOVAL AND RESET OF CONTROLS FOR THIS REASON WILL BE A NON-SEPERATED PAY ITEM, INCLUDING STABILIZED CONSTRUCTION ENTRANCE.
2. OVERALL DRAINAGE AREAS ARE SHOWN ON THIS SHEET. THE SUM OF THE SUB DRAINAGE AREAS TOTAL TO THE OVERALL DRAINAGE AREA.
3. THE SUB DRAINAGE AREAS TO EACH BMP ARE SHOWN ON THE FOLLOWING PAGES.

EROSION AND SEDIMENT CONTROLS SEQUENCE OF CONSTRUCTION:
1. INSTALL PERIMETER CONTROLS, CONSTRUCTION ENTRANCE, AND CONTROLS AROUND CONSTRUCTION AREAS.
2. INSTALL ON-SITE CONTROLS.
3. CONSTRUCT WATERLINE, ADJUSTING LOCATIONS OF ON-SITE CONTROLS AS PROJECT PROGRESSES, AND MAINTAINING ALL CONTROLS.
4. ESTABLISH TEMPORARY STABILIZATION, AND MAINTAIN ALL CONTROLS.
5. ESTABLISH PERMANENT SITE STABILIZATION AND MAINTAIN ALL CONTROLS.
6. REMOVE ALL CONTROLS AND DISPOSE ACCUMULATED SEDIMENT

500 0 250 500 1000



LEGEND

EXISTING	
	PROPERTY (R.O.W.) LINE
	DIRECTION OF FLOW
678	CONTOUR
	DRAINAGE AREA
	FEMA 100-YR FLOODPLAIN
DA-X XX AC	DRAINAGE AREA NUMBER & SIZE

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 23 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____DDZ ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1_____ Correction 1 _____
Rev. 2_____ Correction 2 _____
Rev. 3_____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

APPROVAL | REVISION | NO. | DATE

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE #F-1048 TBPLS #F-10107500

Copyright © 2016

5-6-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED
PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL OVERALL SITE PLAN

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

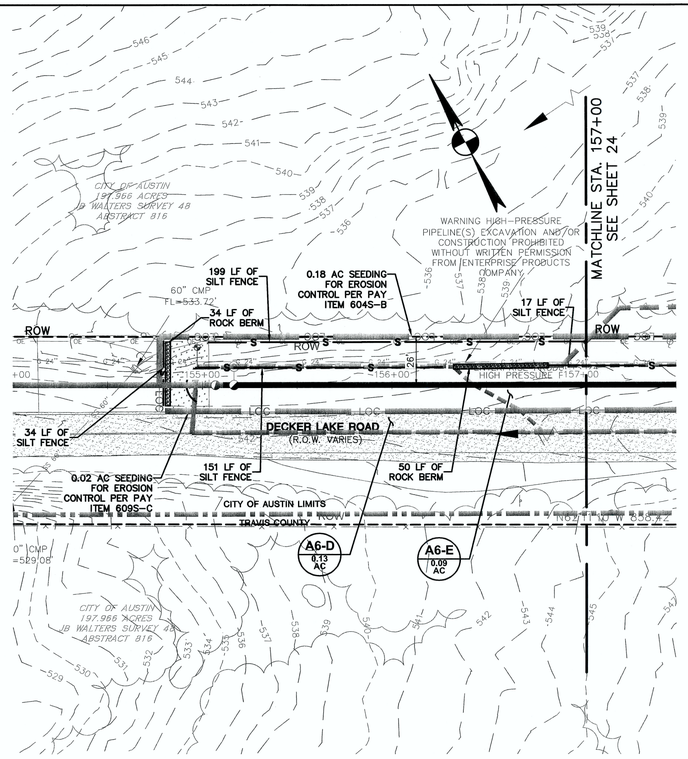
CLUB DEAL 116 & CLUB DEAL 120

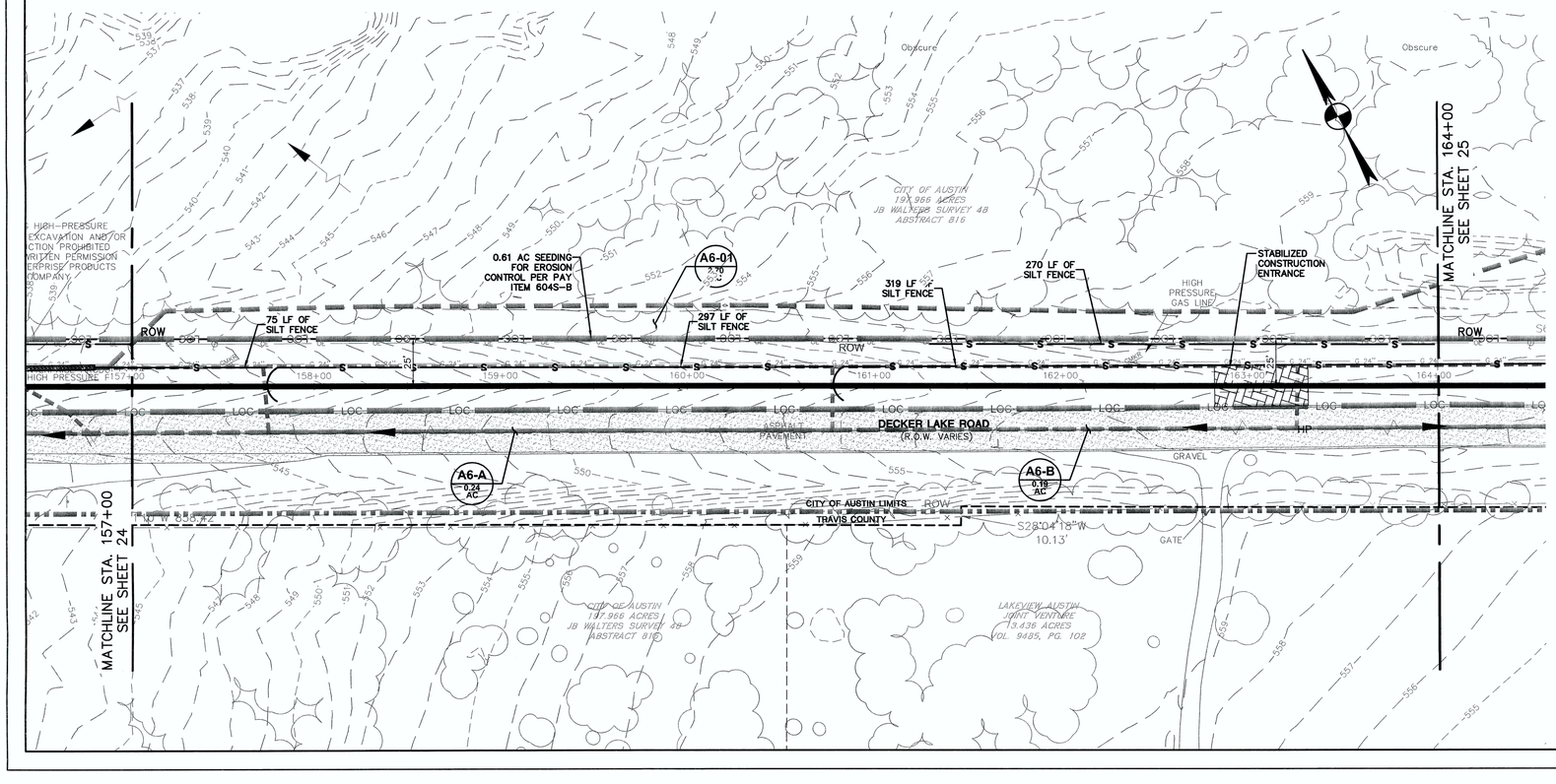
DRAWN BY: JT | DESIGNED BY: SB | REVIEWED BY: AG | PROJECT NO.: R010696010026

SHEET 23 OF 45

G:\106960\10026\CD DWG\106960026SPN03.dwg modified by jthompson on May 2, 16 2:29 PM

SP-2015-0337D





40 0 20 40 80

LEGEND
REVEGETATION

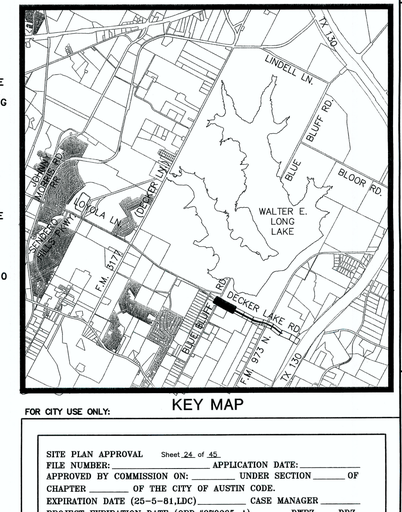
	TYPE
LOC LOC	604S-B
LOC LOC	609S-C

1. SPECIFICATION 604S-B SEEDING FOR EROSION CONTROL SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS OUTSIDE THE PAVED AREAS.
2. SPECIFICATION 609S-B SEEDING AND PLANTING SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS WHICH ARE SUBJECT TO HIGH SCOUR POTENTIAL. THESE AREAS SHALL ALSO RECEIVE SOIL RETENTION BLANKET CLASS I, TYPE A.
3. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4..B.3, SECTION 5, I.]
4. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN-COMPLIANCE WITH CITY OF AUSTIN RULES AND REGULATIONS. [LDC 25-8-183]
5. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
6. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
7. NO MORE THAN 2000 FEET OF CONSTRUCTION ZONE SHALL BE OPEN AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURRING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES. [ECM 1.4.1.2(E), ECM 1.4.1.2(C)(2)]
8. ALL SPOILS ARE TO BE PLACED BACK IN TRENCH EVERY NIGHT; OR IF SPOILS PILES ARE TO REMAIN OVER NIGHT, SPOILS MUST BE PLACED ON THE UPHILL SIDE OF TRENCH WITHIN THE LOC.
9. NO TREES WITH A DIAMETER OF 8 INCHES OR MORE ARE LOCATED WITHIN OR ADJACENT TO THE LOC.

TOTAL APPENDIX F TREE INCHES SURVEYED= 0
TOTAL APPENDIX F TREE INCHES SREMOVED= 0
TOTAL NON-APPENDIX F AND INVASIVE REMOVED= 0
TOTAL MITIGATION INCHES PLANTED ON SITE= 0

LEGEND

EXISTING	PROPOSED	
	TP	TREE PROTECTION
	S	SILT FENCE
	TFD	TRIANGULAR SEDIMENT FILTER DIKE
	LOC	LIMITS OF CONSTRUCTION
		ROCK BERM
		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING AREA
		DRAINAGE AREA
		SUB DRAINAGE AREA
HP		HIGH POINT
LP		LOW POINT
--678--		CONTOUR
		FEMA 100-YR FLOODPLAIN
		DIRECTION OF FLOW



KEY MAP

Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 24 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

5/6/2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL PLAN AND TREE PROTECTION

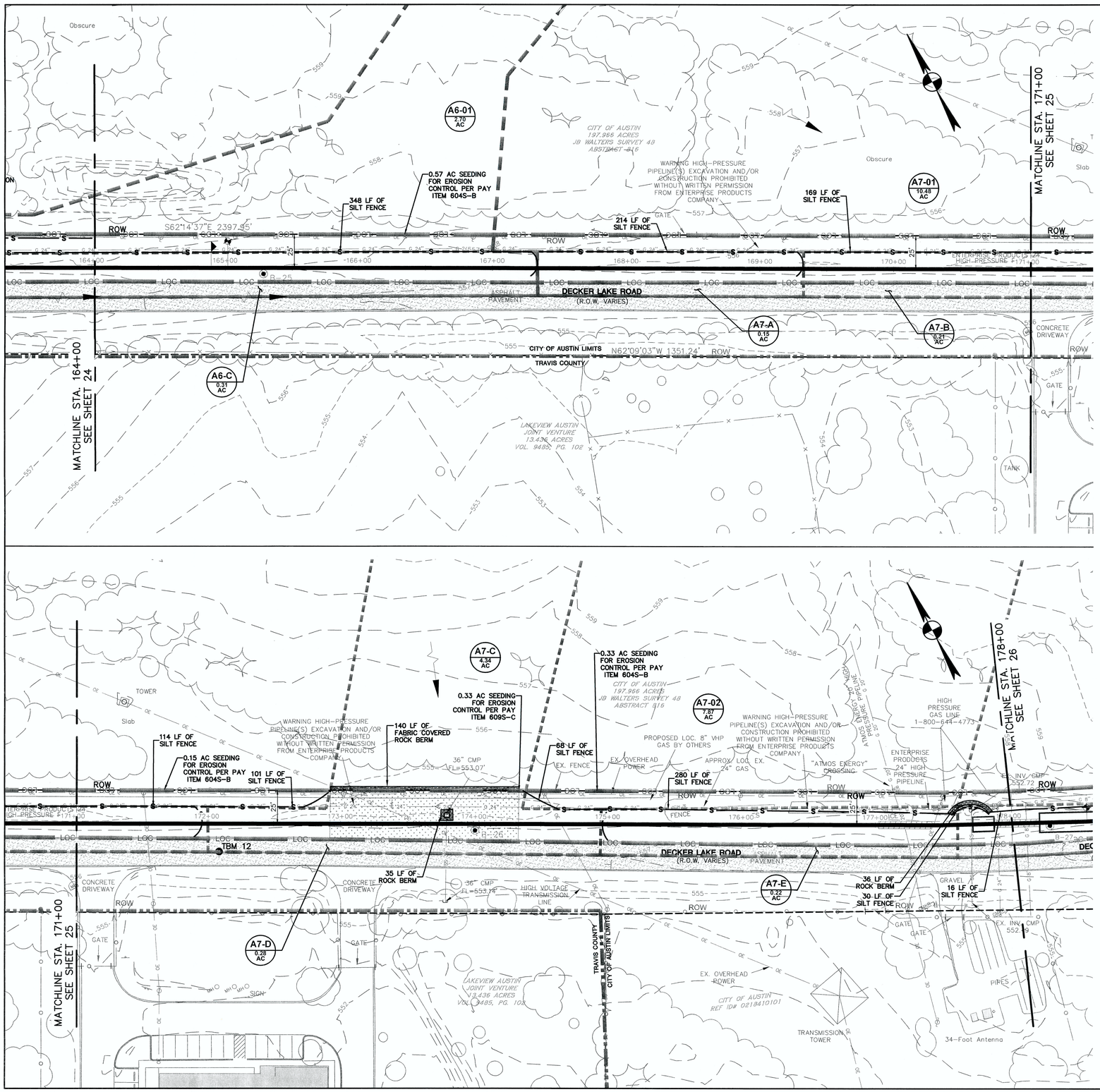
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT | DESIGNED BY: SB | REVIEWED BY: AG | PROJECT NO.: R0106960I0026

SHEET 24 OF 45

G:\106960\I0026\CD DWG\106960I0026EST03.dwg modified by jthompson on Apr 25, 16 4:50 PM

SP-2015-0337D



40 0 20 40 80

LEGEND

REVEGETATION

TYPE
604S–B
609S–C

1. SPECIFICATION 604S–B SEEDING FOR EROSION CONTROL SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS OUTSIDE THE PAVED AREAS.
2. SPECIFICATION 609S–B SEEDING AND PLANTING SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS WHICH ARE SUBJECT TO HIGH SCOUR POTENTIAL. THESE AREAS SHALL ALSO RECEIVE SOIL RETENTION BLANKET CLASS I, TYPE A.
3. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4..B.3, SECTION 5, I.]
4. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN–COMPLIANCE WITH CITY OF AUSTIN RULES AND REGULATIONS. [LDC 25–8–183]
5. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
6. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
7. NO MORE THAN 2000 FEET OF CONSTRUCTION ZONE SHALL BE OPEN AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURRING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES. [ECM 1.4.1.2(E), ECM 1.4.1.2(C)(2)]
8. ALL SPOILS ARE TO BE PLACED BACK IN TRENCH EVERY NIGHT; OR IF SPOILS PILES ARE TO REMAIN OVER NIGHT, SPOILS MUST BE PLACED ON THE UPHILL SIDE OF TRENCH WITHIN THE LOC.
9. NO TREES WITH A DIAMETER OF 8 INCHES OR MORE ARE LOCATED WITHIN OR ADJACENT TO THE LOC.

TOTAL APPENDIX F TREE INCHES SURVEYED= 0
TOTAL APPENDIX F TREE INCHES REMOVED= 0
TOTAL NON–APPENDIX F AND INVASIVE REMOVED= 0
TOTAL MITIGATION INCHES PLANTED ON SITE= 0

LEGEND

EXISTING	PROPOSED	
	TP	TREE PROTECTION
	S	SILT FENCE
	TFD	TRIANGULAR SEDIMENT FILTER DIKE
	LOC	LIMITS OF CONSTRUCTION
		ROCK BERM
		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING AREA
		DRAINAGE AREA
		SUB DRAINAGE AREA
HP		HIGH POINT
LP		LOW POINT
–678–		CONTOUR
		FEMA 100–YR FLOODPLAIN
		DIRECTION OF FLOW

KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 25 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25–5–81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905–A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

5-6-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL PLAN AND TREE PROTECTION

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

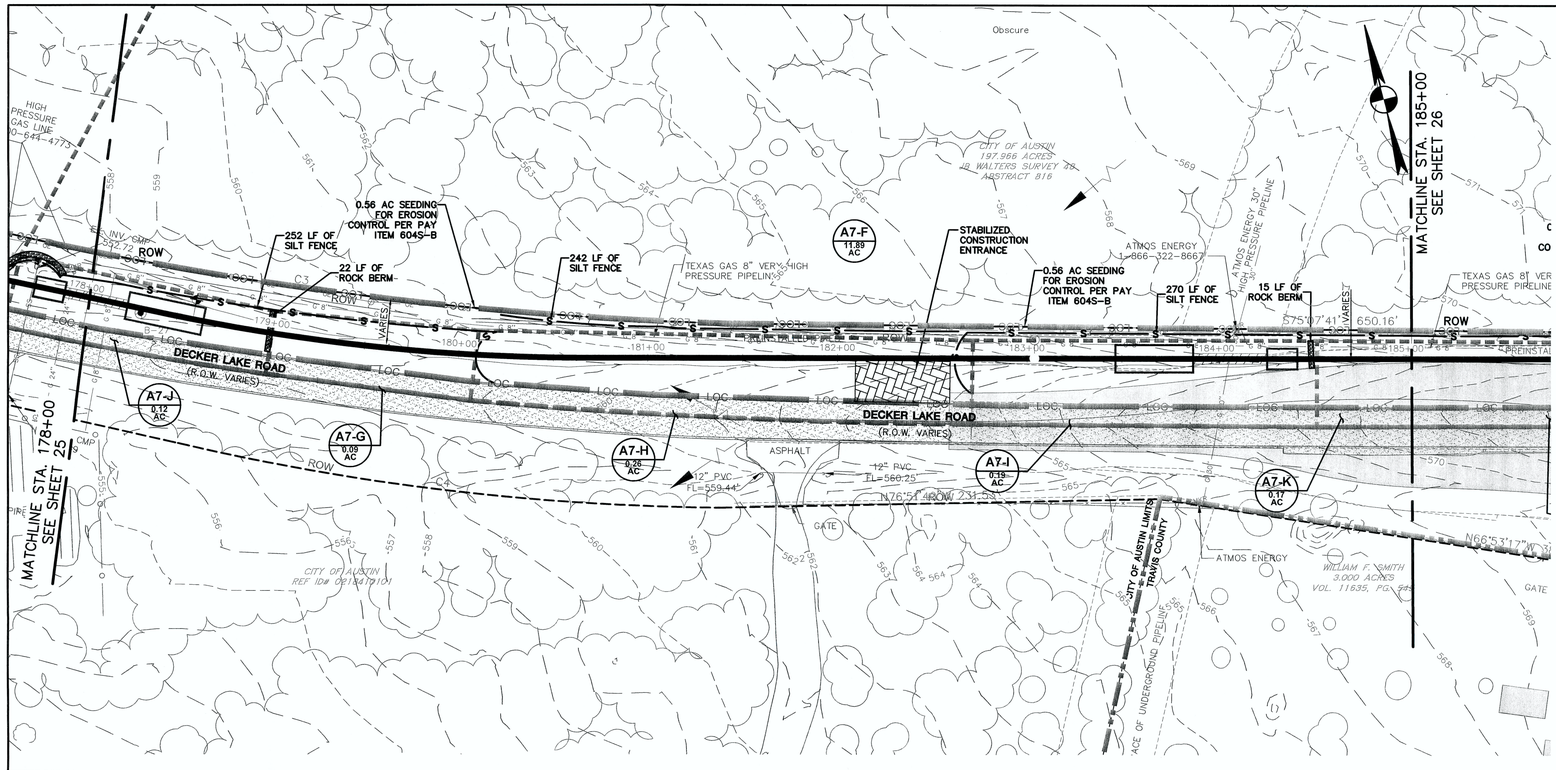
CLUB DEAL 116 & CLUB DEAL 120

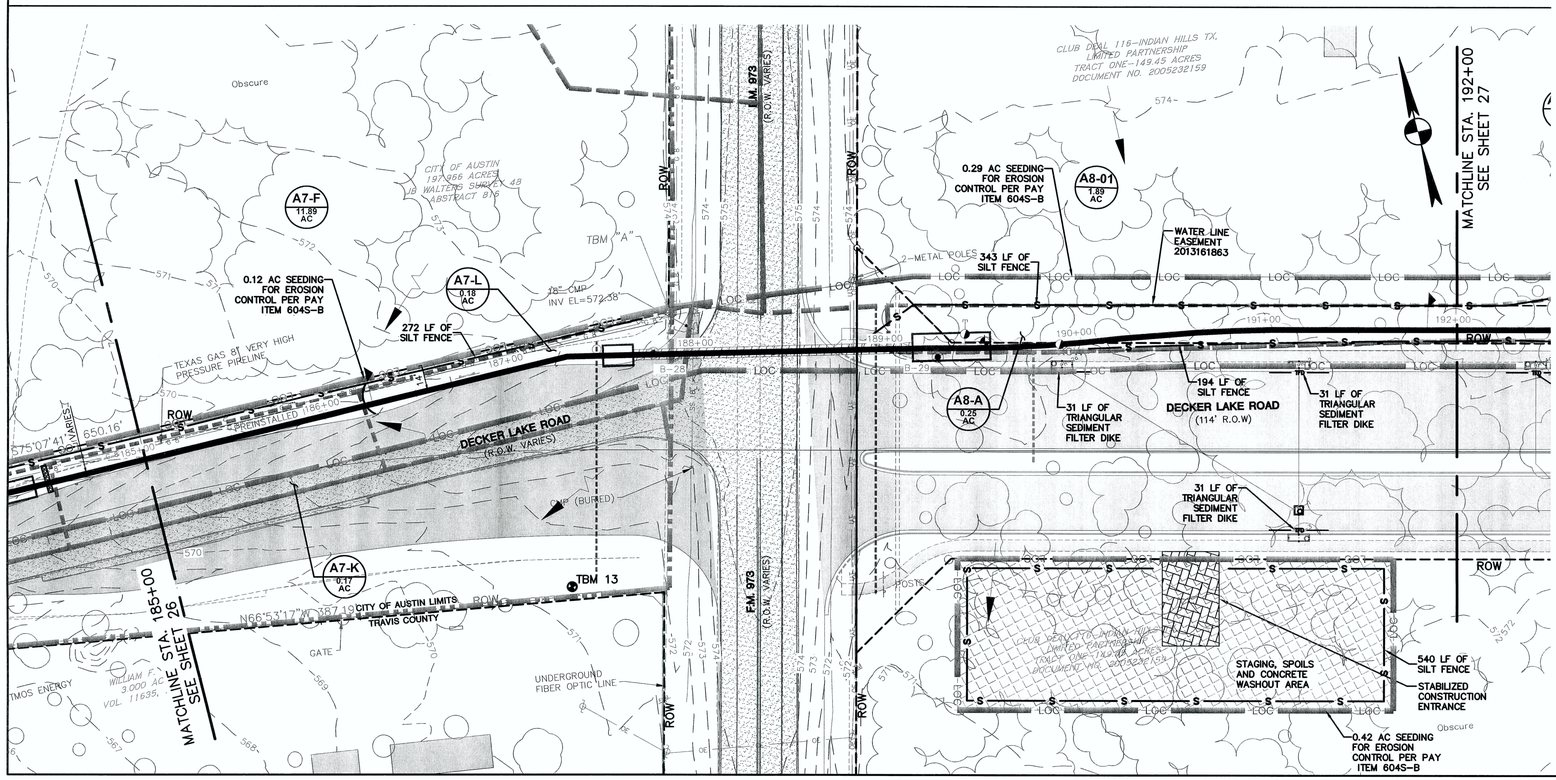
DRAWN BY: JT | DESIGNED BY: SB | REVIEWED BY: AG | PROJECT NO.: R010696010026

SHEET 25 OF 45

G:\010696\010026\CD DWG\010696026ESTD3.dwg modified by jthompson on Apr 25, 16 4:50 PM

SP-2015-0337D





40 0 20 40 80

LEGEND

REVEGETATION

	TYPE
LOC LOC	604S-B
LOC LOC	609S-C

1. SPECIFICATION 604S-B SEEDING FOR EROSION CONTROL SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS OUTSIDE THE PAVED AREAS.
2. SPECIFICATION 609S-B SEEDING AND PLANTING SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS WHICH ARE SUBJECT TO HIGH SCOUR POTENTIAL. THESE AREAS SHALL ALSO RECEIVE SOIL RETENTION BLANKET CLASS I, TYPE A.
3. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5, I.]
4. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN-COMPLIANCE WITH CITY OF AUSTIN RULES AND REGULATIONS. [LDC 25-8-183]
5. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
6. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
7. NO MORE THAN 2000 FEET OF CONSTRUCTION ZONE SHALL BE OPEN AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURRING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES. [ECM 1.4.1.2(E), ECM 1.4.1.2(C)(2)]
8. ALL SPOILS ARE TO BE PLACED BACK IN TRENCH EVERY NIGHT; OR IF SPOILS PILES ARE TO REMAIN OVER NIGHT, SPOILS MUST BE PLACED ON THE UPHILL SIDE OF TRENCH WITHIN THE LOC.
9. NO TREES WITH A DIAMETER OF 8 INCHES OR MORE ARE LOCATED WITHIN OR ADJACENT TO THE LOC.

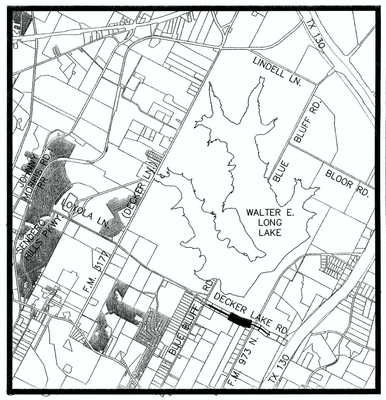
TOTAL APPENDIX F TREE INCHES SURVEYED= 0
TOTAL APPENDIX F TREE INCHES SREMOVED= 0
TOTAL NON-APPENDIX F AND INVASIVE REMOVED= 0
TOTAL MITIGATION INCHES PLANTED ON SITE= 0

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

LEGEND

EXISTING	PROPOSED	
	TP	TREE PROTECTION
	S	SILT FENCE
	TD	TRIANGULAR SEDIMENT FILTER DIKE
	LOC	LIMITS OF CONSTRUCTION
		ROCK BERM
		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING AREA
		DRAINAGE AREA
		SUB DRAINAGE AREA
HP		HIGH POINT
LP		LOW POINT
678		CONTOUR
		FEMA 100-YR FLOODPLAIN
		DIRECTION OF FLOW



KEY MAP

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 26 of 45.
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

DATE	NO.	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2016

5-6-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL PLAN AND TREE PROTECTION

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

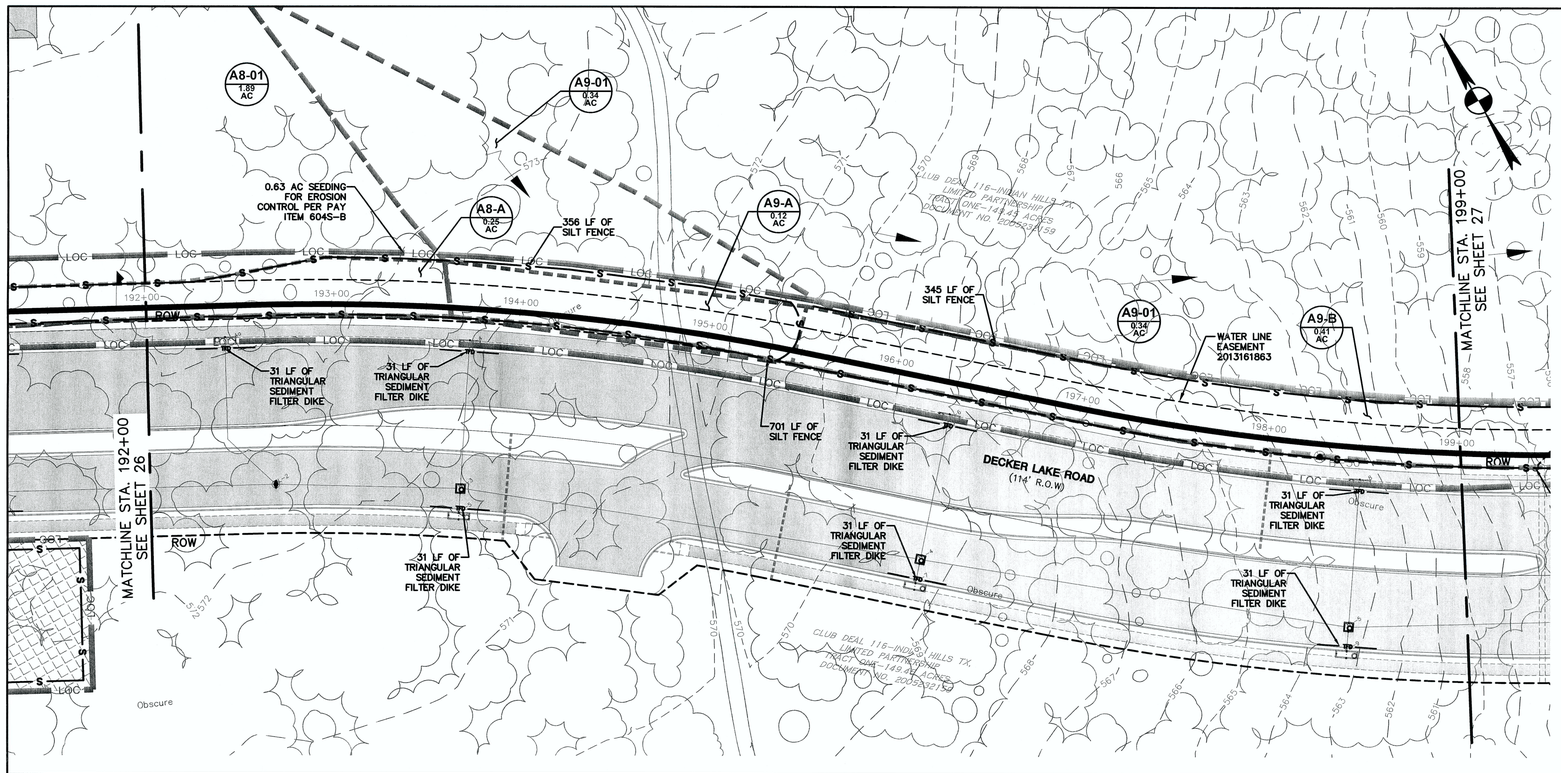
CLUB DEAL 116 & CLUB DEAL 120

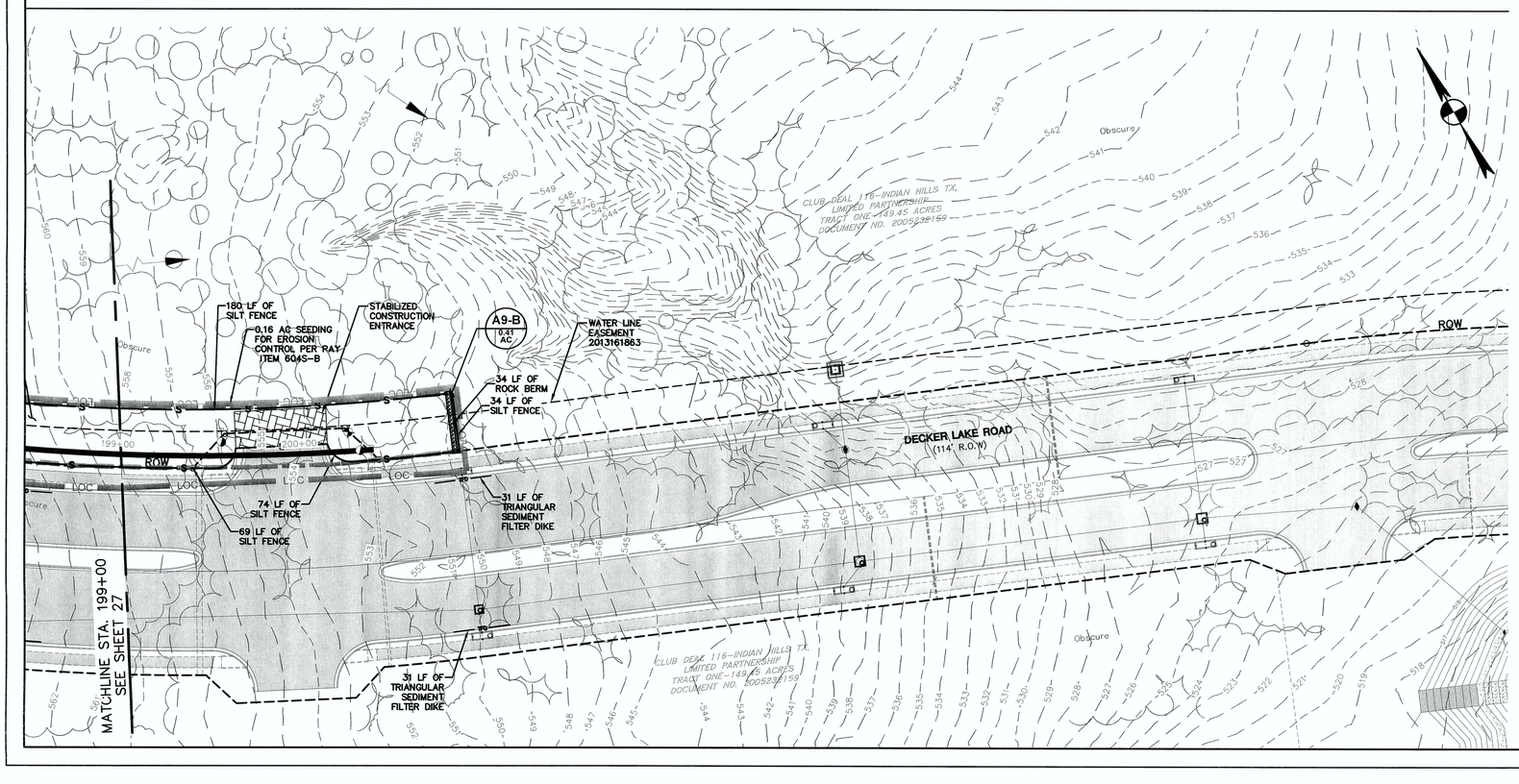
DRAWN BY: JT
DESIGNED BY: SB
REVIEWED BY: AG
PROJECT NO.: R010696010026

SHEET 26 OF 45

G:\106960\1026\CD DWG\106960026ESTO3.dwg modified by jthompson on Apr 25, 16 4:50 PM

SP-2015-0337D





40 0 20 40 80

LEGEND
REVEGETATION

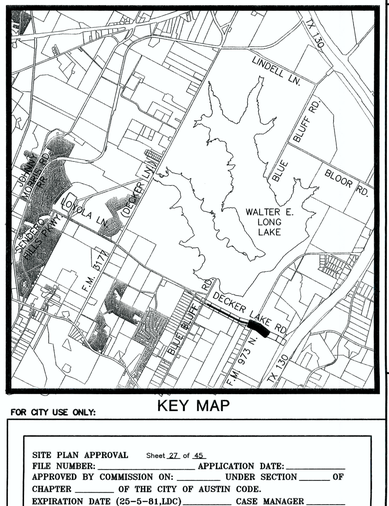
	TYPE
LOC	604S-B
LOC	609S-C

1. SPECIFICATION 604S-B SEEDING FOR EROSION CONTROL SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS OUTSIDE THE PAVED AREAS.
2. SPECIFICATION 609S-B SEEDING AND PLANTING SHALL BE USED TO REVEGETATE ALL DISTURBED AREAS WHICH ARE SUBJECT TO HIGH SCOUR POTENTIAL. THESE AREAS SHALL ALSO RECEIVE SOIL RETENTION BLANKET CLASS I, TYPE A.
3. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING. [ECM 1.4.4.B.3, SECTION 5, I.]
4. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN-COMPLIANCE WITH CITY OF AUSTIN RULES AND REGULATIONS. [LDC 25-8-183]
5. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
6. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
7. NO MORE THAN 2000 FEET OF CONSTRUCTION ZONE SHALL BE OPEN AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURRING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES. [ECM 1.4.1.2(E), ECM 1.4.1.2(C)(2)]
8. ALL SPOILS ARE TO BE PLACED BACK IN TRENCH EVERY NIGHT; OR IF SPOILS PILES ARE TO REMAIN OVER NIGHT, SPOILS MUST BE PLACED ON THE UPHILL SIDE OF TRENCH WITHIN THE LOC.
9. NO TREES WITH A DIAMETER OF 8 INCHES OR MORE ARE LOCATED WITHIN OR ADJACENT TO THE LOC.

TOTAL APPENDIX F TREE INCHES SURVEYED= 0
TOTAL APPENDIX F TREE INCHES REMOVED= 0
TOTAL NON-APPENDIX F AND INVASIVE REMOVED= 0
TOTAL MITIGATION INCHES PLANTED ON SITE= 0

LEGEND

EXISTING	PROPOSED	
	TP	TREE PROTECTION
	S	SILT FENCE
	TD	TRIANGULAR SEDIMENT FILTER DIKE
	LOC	LIMITS OF CONSTRUCTION
		ROCK BERM
		STABILIZED CONSTRUCTION ENTRANCE
		CONSTRUCTION STAGING AREA
		DRAINAGE AREA
		SUB DRAINAGE AREA
HP		HIGH POINT
LP		LOW POINT
-678-		CONTOUR
		FEMA 100-YR FLOODPLAIN
		DIRECTION OF FLOW



KEY MAP

811 Know what's below. Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 27 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500

Copyright © 2016

5-16-16
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL PLAN AND TREE PROTECTION

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: SB
REVEMED BY: AG
PROJECT NO.: R010696010026

SHEET 27 OF 45

G:\010696\10026\CD DWG\10696022ES703.dwg modified by jthompson on Apr 25, 16 4:50 PM

SP-2015-0337D

APPENDIX P–1: – EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE COA ESC PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE–CONSTRUCTION MEETING. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY COA EV PLAN REVIEWERS AS WELL AS COA EV INSPECTORS.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
4. A PRE–CONSTRUCTION CONFERENCE SHALL BE HELD ON–SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTION MEASURES AND PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT, 974–2278, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.
5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
6. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR WITH EITHER A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), CERTIFIED EROSION, SEDIMENT AND STORMWATER–INSPECTOR (CESSWI) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.
9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW.
   A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES. THE TOPSOIL SHALL BE COMPOSED OF 4 PARTS OF SOIL MIXED WITH 1 PART COMPOST, BY VOLUME. THE COMPOST SHALL MEET THE DEFINITION OF COMPOST AS DEFINED BY TXDOT SPECIFICATION ITEM 161. THE SOIL SHALL BE LOCALLY AVAILABLE NATIVE SOIL THAT MEETS THE FOLLOWING SPECIFICATIONS:

   •SHALL BE FREE OF TRASH, WEEDS, DELETERIOUS MATERIALS, ROCKS, AND DEBRIS.

   •100% SHALL PASS THROUGH A 1.5–INCH (38–MM) SCREEN.

   •SOIL TO BE A LOAMY MATERIAL THAT MEETS THE REQUIREMENTS OF THE TABLE BELOW IN ACCORDANCE WITH THE USDA TEXTURAL TRIANGLE. SOIL KNOWN LOCALLY AS "RED DEATH" IS NOT AN ALLOWABLE SOIL. TEXTURAL COMPOSITION SHALL MEET THE FOLLOWING CRITERIA:

TEXTURAL CLASS	MINIMUM	MAXIMUM
CLAY	5%	50%
SILT	10%	50%
SAND	15%	67%

• AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE SOIL TEXTURE CLASS REQUIRED ABOVE BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.
• SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL–BLENDED MATERIAL.

TOPSOIL SALVAGED FROM THE EXISTING SITE MAY OFTEN BE USED, BUT IT SHOULD MEET THE SAME STANDARDS AS SET FORTH IN THESE STANDARDS.

THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS:

TEMPORARY VEGETATIVE STABILIZATION:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH COOL SEASON COVER CROPS (WHEAT AT 0.5 POUNDS PER 1000 SF, OATS AT 0.5 POUNDS PER 1000 SF, CEREAL RYE GRAIN AT 0.5 POUNDS PER 1000 SF) WITH A TOTAL RATE OF 1.5 POUNDS PER 1000 SF. COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUNDS PER 1000 SF.
   A. FERTILIZER SHALL BE WATER SOLUBLE WITH AN ANALYSIS OF 15–15–15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF 1/2 POUND PER 1000 SF.
   B. HYDROMULCH SHALL COMPLY WITH TABLE1, BELOW.
   C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
   D. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
100% OR ANY BLEND OF WOOD, CELLULOSE, STRAW AND/OR COTTON PLANT MATERIAL (EXCEPT NO MULCH SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0–3 MONTHS	MODERATE SLOPES: FROM FLAT TO 3:1	1500 TO 2000 LBS PER ACRE

PERMANENT VEGETATIVE STABILIZATION:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOWED TO A HEIGHT OF LESS THAN ONE–HALF (½) INCH AND THE AREA SHALL BE RE–SEEDED IN ACCORDANCE WITH 2. BELOW.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 1 POUND PER 1000 SF WITH A PURITY OF 95% WITH 85% GERMINATION. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL.
   A. FERTILIZER SHALL BE A WATER SOLUBLE WITH AN ANALYSIS OF 15–15–15 TO BE APPLIED ONCE AT PLANTING AND ONCE DURING THE PERIOD OF ESTABLISHMENT AT A RATE OF ½POUND PER 1000 SF.
   B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.
   C. THE PLANTED AREA SHALL BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF SIX INCHES. THE IRRIGATION SHALL OCCUR AT DAILY INTERVALS (MINIMUM) DURING THE FIRST TWO MONTHS. RAINFALL OCCURRENCES OF ½INCH OR MORE SHALL POSTPONE THE WATERING SCHEDULE FOR ONE WEEK.
   D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 16 SQUARE FEET EXIST.
   E. WHEN REQUIRED, NATIVE GRASS SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL.

TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS			
10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2500 TO 4000 LBS PER ACRE (SEE MANUFACTURER'S RECOMMENDATIONS)	
FIBER REINFORED MATRIX (FRM)	65% ORGANIC DEFIBRATED FIBERS 25% REINFORCING FIBERS OR LESS 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND EROSIVE SOIL CONDITIONS	3000 TO 4500 LBS PER ACRE (SEE MANUFACTURER'S RECOMMENDATIONS)

10. DEVELOPER INFORMATION:

OWNER: CLUB DEAL 116 INDIAN HILLS, TX LIMITED PARTNERSHIP & CLUB DEAL 120 WHISPER VALLEY, TX LIMITED PARTNERSHIP PHONE # (817) 788–1000

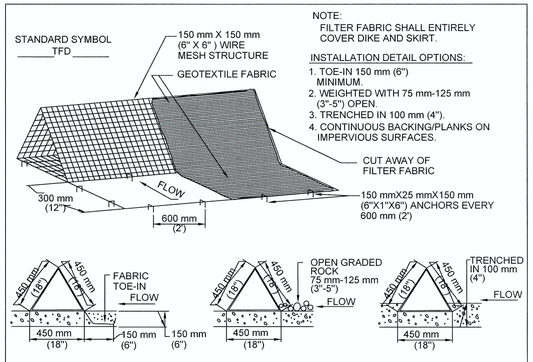
ADDRESS: 9285 HUNTINGTON SQUARE, NORTH RICHLAND HILLS, TX 76182

OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS:
BURY PHONE # (512) 328–0011

PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE:
CONTRACTOR PHONE # _____

PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE:
CONTRACTOR PHONE # _____

11. THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE PLANNING AND DEVELOPMENT REVIEW DEPARTMENT AT 974–2278 AT LEAST 48 HOURS PRIOR WITH THE LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.

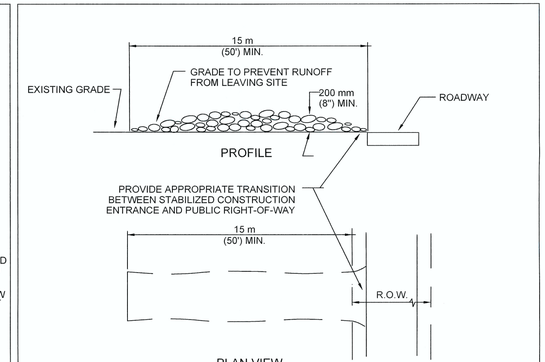


NOTE:
FILTER FABRIC SHALL ENTIRELY COVER DIKE AND SKIRT.

INSTALLATION DETAIL OPTIONS:
1. TOE-IN 150 mm (6") MINIMUM.
2. WEIGHTED WITH 75 mm-125 mm (3"-5") OPEN.
3. TRENCHED IN 100 mm (4").
4. CONTINUOUS BACKING/PLANKS ON IMPERVIOUS SURFACES.

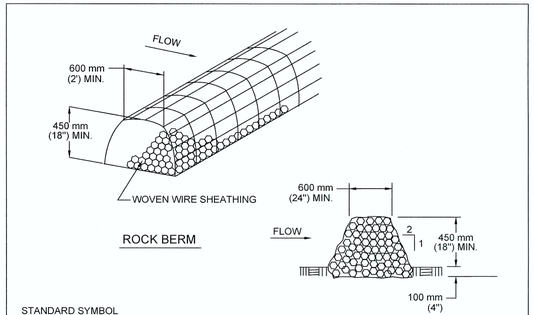
GENERAL NOTES
1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 75-125 mm (3-5") OPEN GRADED ROCK OR TOED-IN 150 mm (6") WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4").
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 150 mm (6") WIRE STAPLES ON 600 mm (2') CENTERS ON BOTH EDGES AND SKIRT, OR STAKE USING 10M (3/8 ") DIAMETER RE-BAR WITH TEE ENDS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 150 mm (6") TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE MW40-150 mmX150 mm (6 GA. 6"X6") WIRE MESH, 450 mm (18") ON A SIDE.
7. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6") AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
9. AFTER THE DEVELOPMENT SITE IS COMPLETLY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TRIANGULAR SEDIMENT FILTER DIKE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	3/27/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 628S



NOTES:
1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

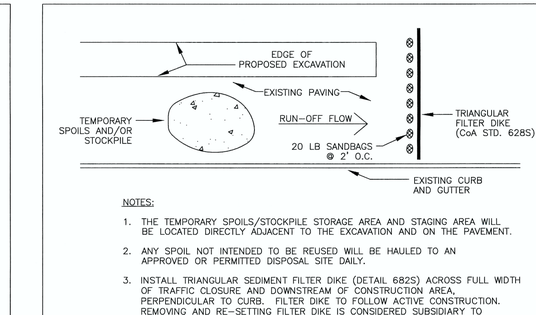
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY	5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



STANDARD SYMBOL FOR ROCK BERM (RB)
___RB___

NOTES:
1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		ROCK BERM	
RECORD COPY SIGNED BY MORGAN BYARS	8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



NOTES:
1. THE TEMPORARY SPOILS/STOCKPILE STORAGE AREA AND STAGING AREA WILL BE LOCATED DIRECTLY ADJACENT TO THE EXCAVATION AND ON THE PAVEMENT.
2. ANY SPOIL NOT INTENDED TO BE REUSED WILL BE HAULED TO AN APPROVED OR PERMITTED DISPOSAL SITE DAILY.
3. INSTALL TRIANGULAR SEDIMENT FILTER DIKE (DETAIL 682S) ACROSS FULL WIDTH OF TRAFFIC CLOSURE AND DOWNSTREAM OF CONSTRUCTION AREA, PERPENDICULAR TO CURB. FILTER DIKE TO FOLLOW ACTIVE CONSTRUCTION. REMOVING AND RE–SETTING FILTER DIKE IS CONSIDERED SUBSIDIARY TO BARRICADES AND TRAFFIC HANDLING.

ADDITIONAL EROSION/SEDIMENTATION CONTROL FOR WORK IN PAVED AREAS

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 28 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

APPROVAL | REVISION | NO. | DATE

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel: (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2016

5-16-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL AND TREE PROTECTION DETAILS

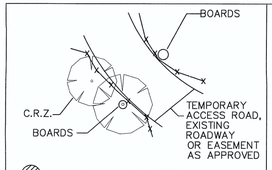
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT | DESIGNED BY: SB | REVIEWED BY: AG | PROJECT NO.: R010696010026

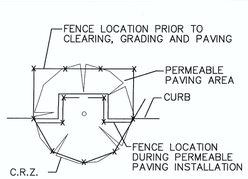
SHEET 28 OF 45

G:\106960\10026\CD DWG\106960026TP001.dwg modified by jthompson on Apr 25, 16 2:37 PM

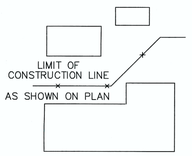
SP-2015-0337D



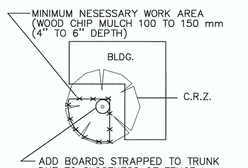
LINEAR CONSTRUCTION THROUGH TREES



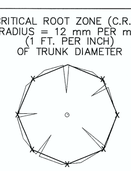
TREES IN PAVING AREA



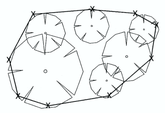
NATURAL AREAS



TREES NEAR CONSTRUCTION ACTIVITY

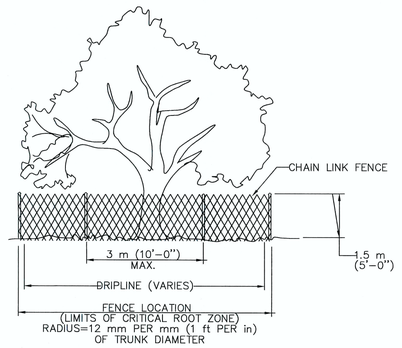


INDIVIDUAL TREE

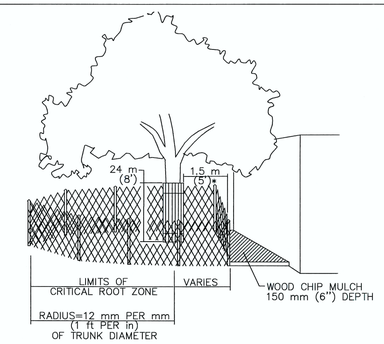


GROUP OF TREES

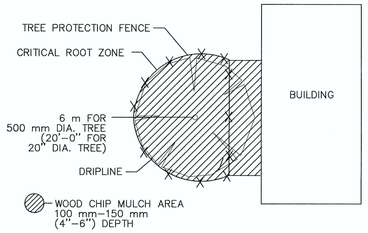
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROTECTION FENCE LOCATIONS	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S–1



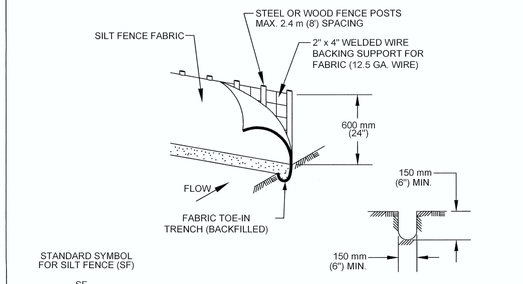
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROTECTION FENCE TYPE A – CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S–2



*AS NEEDED TO PROVIDE MINIMUM NECESSARY WORK SPACE. IF LESS THAN 1.5 m (5'), THEN ADD BOARDS STRAPPED TO TRUNK.



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	TREE PROTECTION FENCE MODIFIED TYPE A – CHAIN LINK	
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S–4



TRENCH CROSS SECTION

1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.

3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

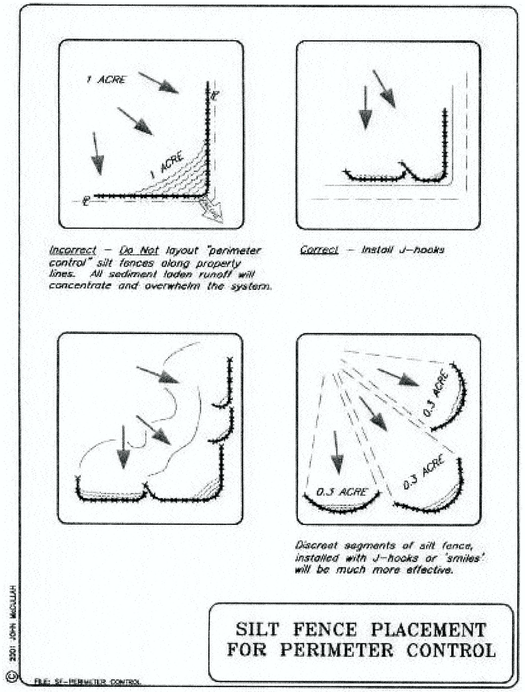
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.

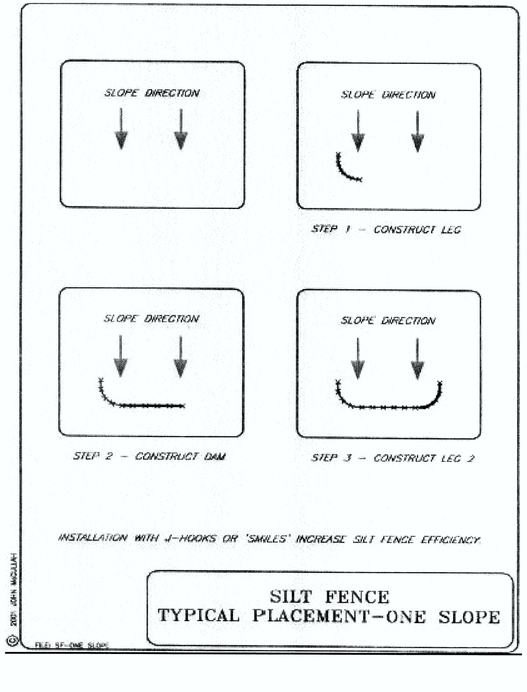
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
RECORD COPY SIGNED BY MORGAN BYARS 09/01/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1

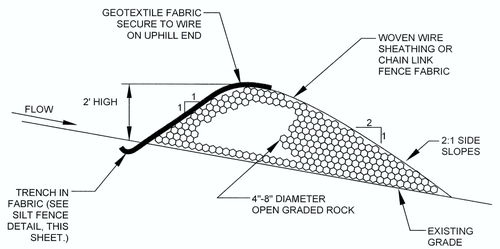


SILT FENCE PLACEMENT FOR PERIMETER CONTROL



SILT FENCE TYPICAL PLACEMENT–ONE SLOPE

REV: DATE: DESCRIPTION: APPROVED BY WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT



NOTES:

1. USE ONLY OPEN GRADED ROCK, 4-8 INCH DIAMETER, FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK, 3-5 INCH DIAMETER, FOR OTHER CONDITIONS.
2. ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.
6. WHEN SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

FABRIC COVERED (SEVERE SERVICE) ROCK BERM

CITY OF AUSTIN		
GENERAL PERMIT PROGRAM APPROVED	ADOPTED: SCALE: N.T.S. INITIAL:	STANDARD NO. N/A

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 29 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2016

5-16-2016
STATE OF TEXAS
STEPHANIE D. BLEW
92682
LICENSED
PROFESSIONAL ENGINEER
Stephanie D Blew

EROSION CONTROL AND TREE PROTECTION DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

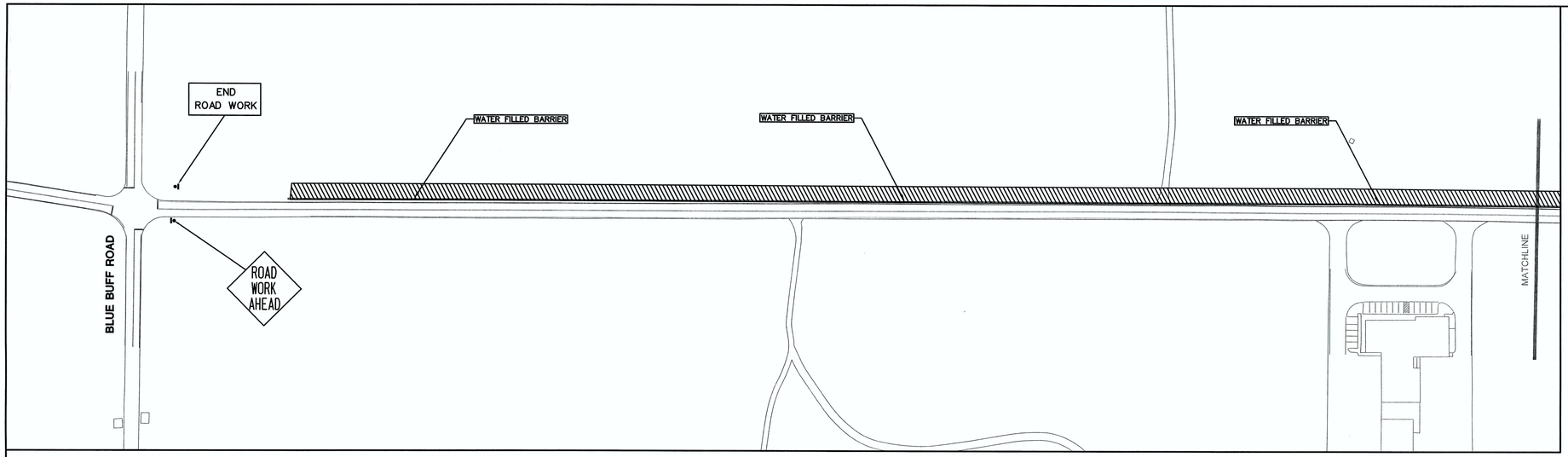
CLUB DEAL 116 & CLUB DEAL 120

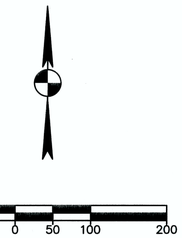
DRAWN BY: JT | DESIGNED BY: SB | REVIEWED BY: AG | PROJECT NO.: R010696010026

SHEET 29 OF 45

G:\106960\10026\CD DWG\106960026TPD01.dwg modified by jthompsen on Apr 25, 16 2:37 PM

SP-2015-0337D



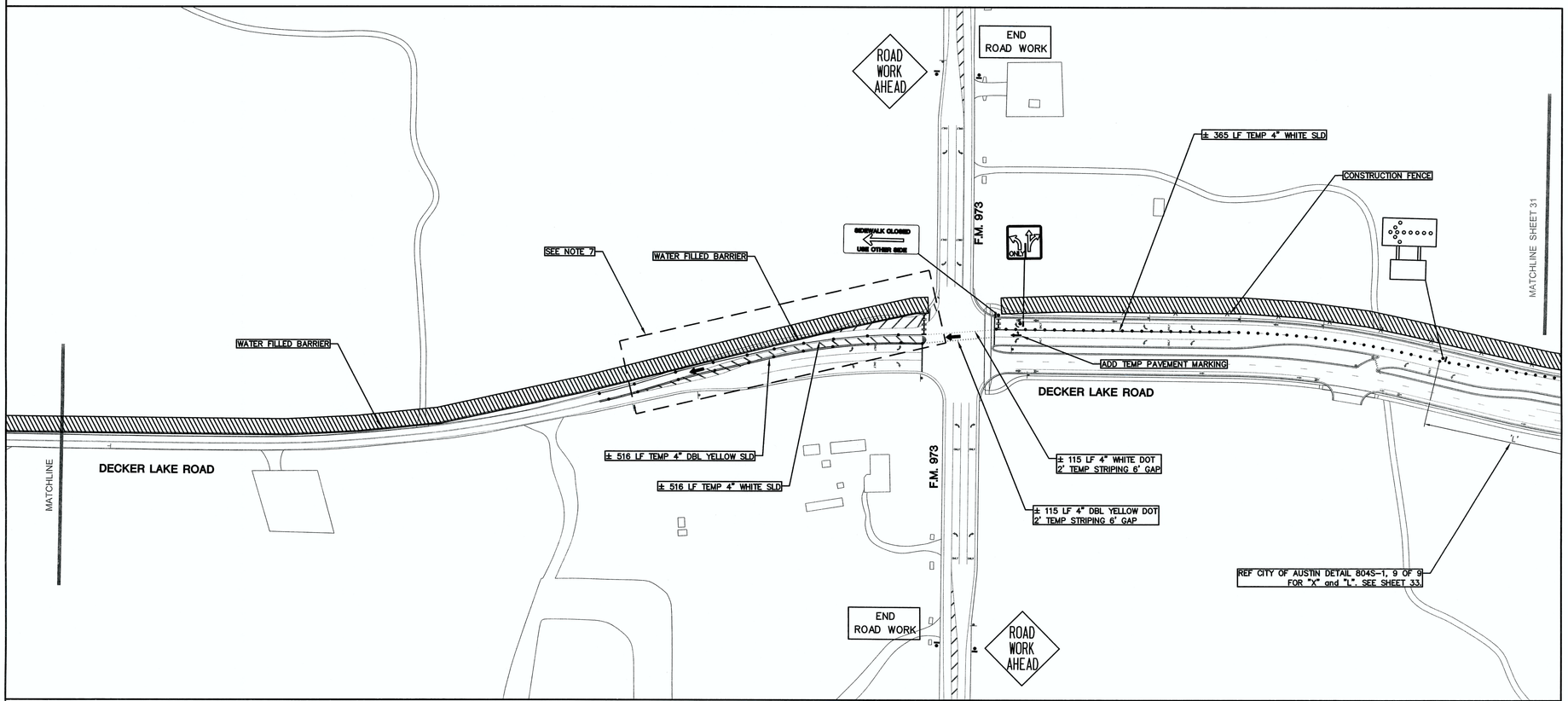


LEGEND

EXISTING	PROPOSED	DESCRIPTION
		TRAFFIC CONTROL SIGNAGE
		CHANNELIZING DEVICE
		BARRICADE
		WORK ZONE
		WATER FILLED BARRIER

NOTES

1. FOR SIGN SPACING AND DEVICE PLACEMENT SEE DETAIL 804S-1, 4 & 9 OF 9. ON SHEETS 32 & 33
2. ALL UTILITIES MUST BE IN PLACE PRIOR TO BEGINNING WORK ON DRIVEWAYS AND SIDEWALKS.
3. WORK WITHIN INTERSECTIONS SHALL ONLY BE DONE DURING WEEKENDS.
4. EXCAVATION IS LIMITED TO 100 FEET OF OPEN TRENCH AND 300 FEET TOTAL LANE CLOSURE.
5. CONTRACTOR SHALL MOVE TRAFFIC CONTROL SIGNS AS CONSTRUCTION PROGRESSES ALONG WORK AREA.
6. CONTRACTOR SHALL COVER EXISTING STRIPING IN AREAS IN WHICH CONSTRUCTION RELATED STRIPING IS PROPOSED WITH APPROPRIATE MATERIAL.
7. CONTRACTOR TO COVER EXISTING YELLOW CROSS HATCHING WEST OF FM 973 WITH TEMPORARY BLACK TAPE FOR DURATION OF WORK AND APPLY TEMPORARY SOLID STRIPING AS SHOWN FOR TRANSITION OF TRAFFIC ACROSS THE INTERSECTION. TEMPORARY STRIPING SHALL BE IN PLACE PER CONTRACTORS ESTIMATE FOR DURATION OF WORK IN THE PROPOSED AREA.



FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 30 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2016

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL PLAN 1

INDIAN HILLS 48-INCH
WATER LINE NO. 1 PH. 1b & 1c

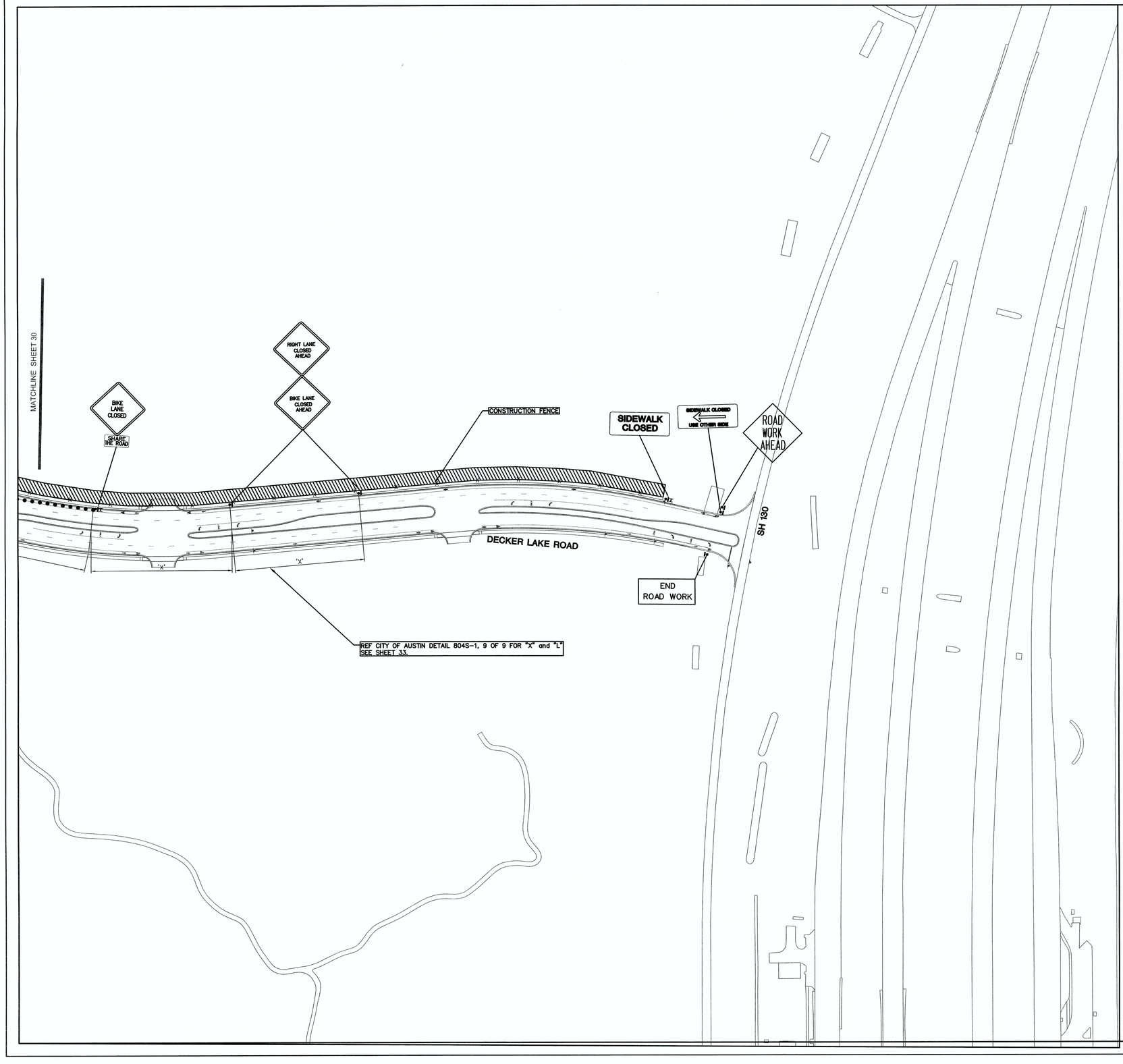
CLUB DEAL 116 &
CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET
30
OF
45

G:\106960\10026\CD DWG\TRAFFIC\v10696002GTCP01.dwg modified by jthompson on Apr 25, 16 2:32 PM

SP-2015-0337D



100 0 50 100 200

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		TRAFFIC CONTROL SIGNAGE
		CHANNELIZING DEVICE
		BARRICADE
		WORK ZONE
		WATER FILLED BARRIER

NOTES

1. FOR SIGN SPACING AND DEVICE PLACEMENT SEE DETAIL 804S-1, 4 & 9 OF 9. ON SHEETS 32 & 33
2. ALL UTILITIES MUST BE IN PLACE PRIOR TO BEGINNING WORK ON DRIVEWAYS AND SIDEWALKS.
3. WORK WITHIN INTERSECTIONS SHALL ONLY BE DONE DURING WEEKENDS.
4. EXCAVATION IS LIMITED TO 100 FEET OF OPEN TRENCH AND 300 FEET TOTAL LANE CLOSURE.
5. CONTRACTOR SHALL MOVE TRAFFIC CONTROL SIGNS AS CONSTRUCTION PROGRESSES ALONG WORK AREA.
6. CONTRACTOR SHALL COVER EXISTING STRIPING IN AREAS IN WHICH CONSTRUCTION RELATED STRIPING IS PROPOSED WITH APPROPRIATE MATERIAL.
7. CONTRACTOR TO COVER EXISTING YELLOW CROSS HATCHING WEST OF FM 973 WITH TEMPORARY BLACK TAPE FOR DURATION OF WORK AND APPLY TEMPORARY SOLID STRIPING AS SHOWN FOR TRANSITION OF TRAFFIC ACROSS THE INTERSECTION. TEMPORARY STRIPING SHALL BE IN PLACE PER CONTRACTORS ESTIMATE FOR DURATION OF WORK IN THE PROPOSED AREA.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 31 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____DDZ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel: (512) 328-0011 Fax: (512) 328-0325
TBPE F-1046 TBPLS # F-10107500
Copyright © 2015

5/6/2015
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL PLAN 2

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

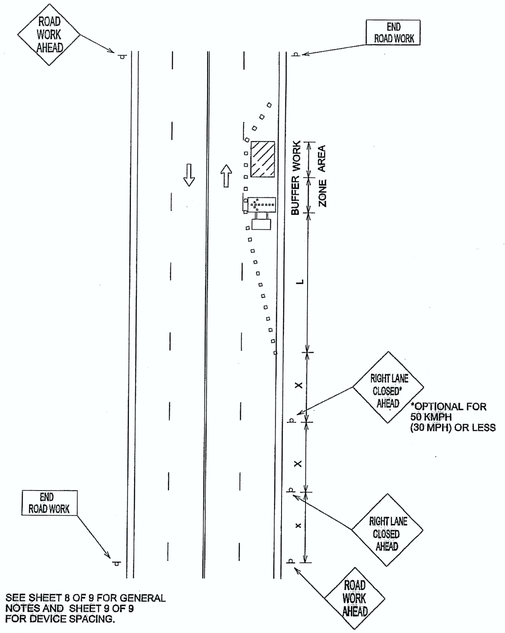
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 31 OF 45

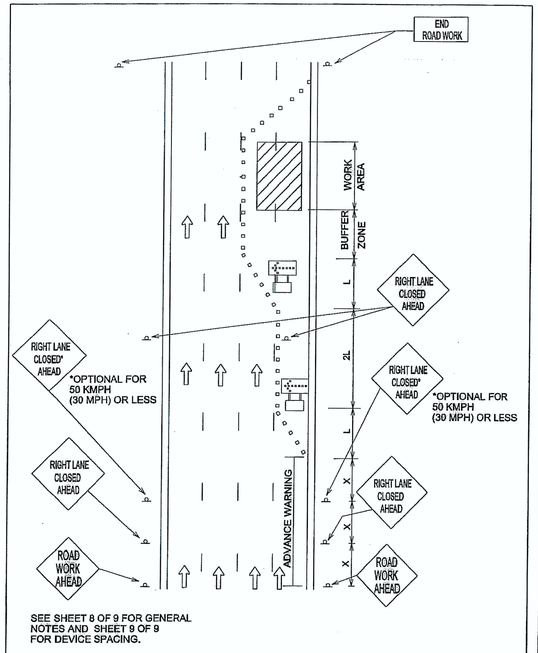
G:\106960\10026\CD DWG\TRAFFIC\v106960026TCP02.dwg modified by ajatar on Oct 21, 15 10:23 AM

SP-2015-0337D



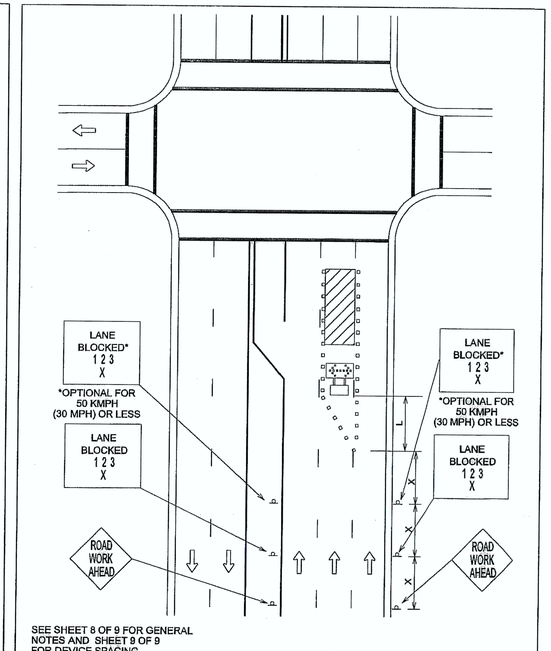
SEE SHEET 8 OF 9 FOR GENERAL NOTES AND SHEET 9 OF 9 FOR DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	ARTERIAL ONE LANE CLOSURE	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 1 OF 9



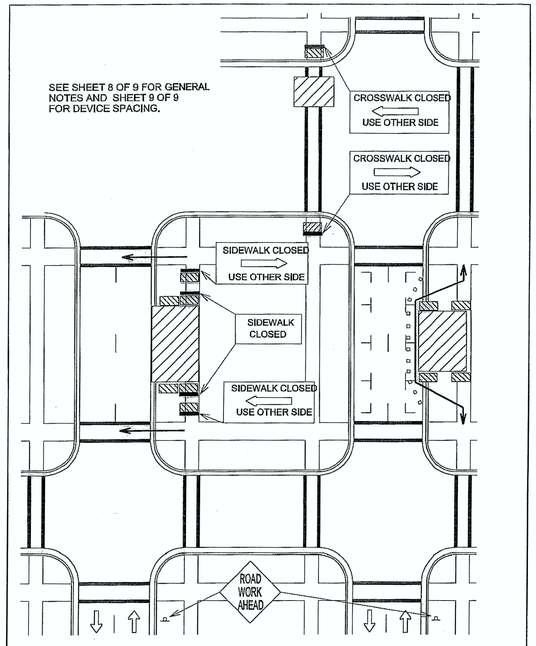
SEE SHEET 8 OF 9 FOR GENERAL NOTES AND SHEET 9 OF 9 FOR DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	ONE WAY ARTERIAL TWO-LANE CLOSURE	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 2 OF 9

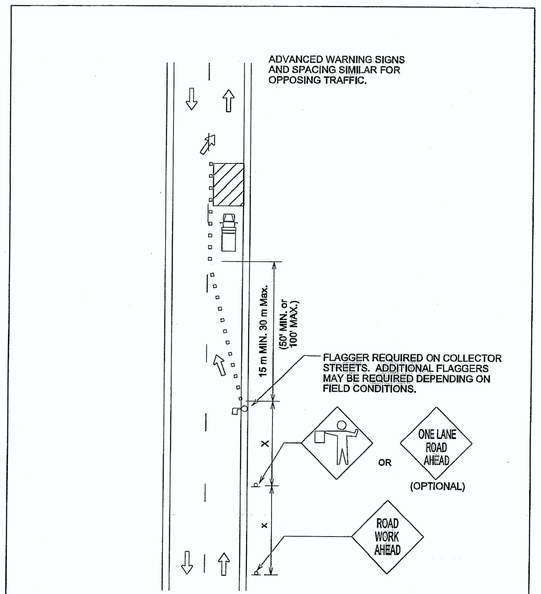


SEE SHEET 8 OF 9 FOR GENERAL NOTES AND SHEET 9 OF 9 FOR DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TWO WAY, DIVIDED ARTERIAL ONE LANE CLOSURE	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 3 OF 9

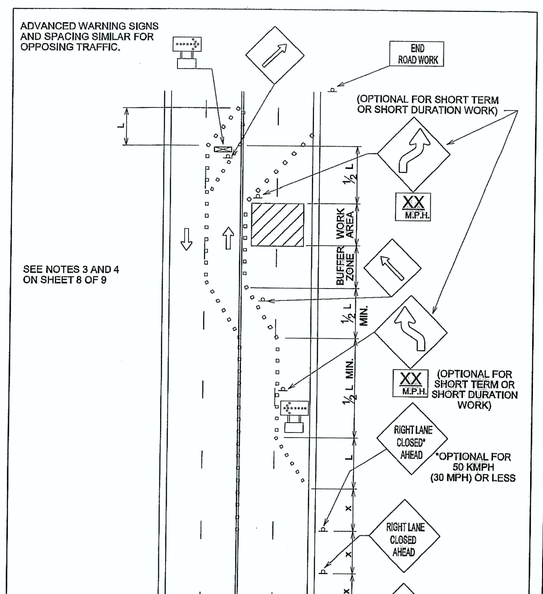


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	BYPASS WALKWAY, SIDEWALK AND CROSSWALK CLOSURES	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 4 OF 9



SEE SHEET 8 OF 9 FOR GENERAL NOTES AND SHEET 9 OF 9 FOR DEVICE SPACING.

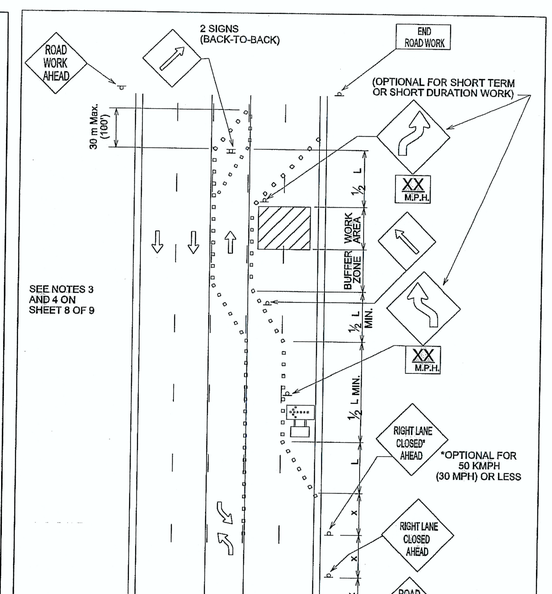
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	COLLECTOR/RESIDENTIAL LANE CLOSURES	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 5 OF 9



SEE NOTES 3 AND 4 ON SHEET 8 OF 9

SEE SHEET 8 OF 9 FOR GENERAL NOTES AND SHEET 9 OF 9 FOR DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRAFFIC CONTROL PLAN FOR SHIFTING TRAFFIC	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 6 OF 9



SEE NOTES 3 AND 4 ON SHEET 8 OF 9

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRAFFIC CONTROL PLAN FOR SHIFTING TRAFFIC	
Kui Burchard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 7 OF 9

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 32 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

DATE	NO.	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel: (512) 328-0011 Fax: (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2015

5/6/2015
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010695010026

SHEET 32 OF 45

G:\106960\10026\CD_DWG\106960026TCD01.dwg modified by jthompson on Oct 21, 15 10:47 AM

SP-2015-0337D

1. ALL SETUPS SHALL BE IN ACCORDANCE WITH THE CURRENT ADDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL.

2. TO DETERMINE APPROPRIATE DEVICES AND SIGN SIZES TO BE USED, REFER TO STANDARD 804S-5. SHEETS 5, 6 AND 7 OF 11.

3. FOR INTERMEDIATE-TERM SITUATIONS, WHEN IT IS NOT FEASIBLE TO REMOVE AND RESTORE PAVEMENT MARKINGS, THE CHANNELIZATION MUST BE MADE DOMINANT BY USING A VERY CLOSE DEVICE SPACING. THIS IS ESPECIALLY IMPORTANT IN LOCATIONS OF CONFLICTING INFORMATION, SUCH AS WHERE TRAFFIC IS DIRECTED OVER A DOUBLE YELLOW CENTERLINE. IN SUCH LOCATIONS, A MAXIMUM CHANNELIZING DEVICE SPACING OF 3 m (10') IS REQUIRED.

4. FOR LONG TERM STATIONARY WORK, ALL CONFLICTING PAVEMENT MARKINGS MUST BE REMOVED AND CENTERLINE STRIPING PROVIDED WHERE TWO WAY TRAFFIC IS IN ADJACENT LANES.

5. FOR TEMPORARY PAVEMENT MARKING REQUIREMENTS SEE STANDARD 804S-3.

6. FOR ONE-WAY AND MULTI-LANE ROADWAYS THE "LANE BLOCKED" SIGN MAY BE USED IN LIEU OF THE "LANE CLOSED AHEAD" SIGN. THE NUMBER OF DIGITS ON THE SIGN SHALL NOT BE GREATER THAN THE NUMBER OF LANES PRESENT ON THE ROADWAY. THE "X" SHALL BE PLACED UNDER THE NUMBER OF LANE(S) BLOCKED.

7. FOR FLAGGING OPERATION REQUIREMENTS SEE STANDARD 804S-2.

8. CONTRACTOR SHALL PROVIDE SIDEWALK CLOSURES, CROSSWALK CLOSURES OR WALKWAY BYPASS WHEREVER PEDESTRIAN MOVEMENTS ARE AFFECTED BY CONSTRUCTION ACTIVITIES. ALL SIDEWALKS AND CROSSWALKS SHALL BE ACCESSIBLE WHEN CONTRACTOR IS NOT WORKING UNLESS APPROVED BY THE TRANSPORTATION DIVISION.

9. FOR EXCAVATION PROTECTION AND SAFETY FENCE REQUIREMENTS SEE STANDARD 804S-4.

10. THE USE OF ARROW DISPLAYS ARE REQUIRED ON ALL LANE CLOSURES. THE CONTRACTOR SHALL PROVIDE ONE (1) STAND-BY UNIT IN GOOD WORKING CONDITION AT THE JOB SITE, READY FOR USE IF THE OPERATION REQUIRES 24-HOUR A DAY LANE CLOSURE SET-UPS.

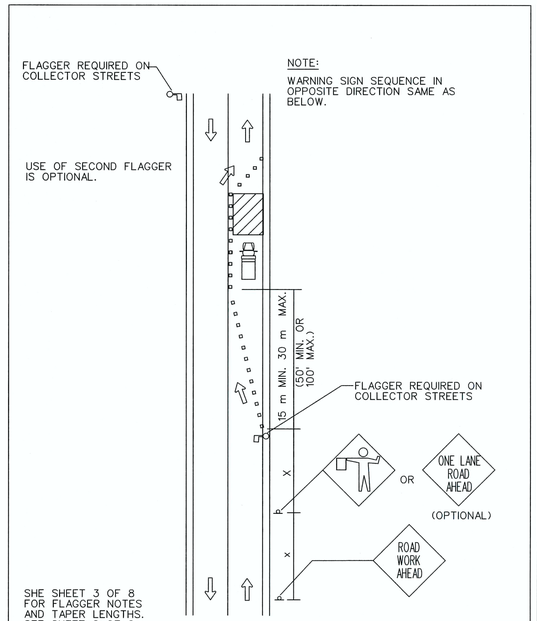
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GENERAL NOTES	
Kir Rueshaard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 8 OF 9

Typical Transition Lengths and Suggested Maximum Spacing of Devices

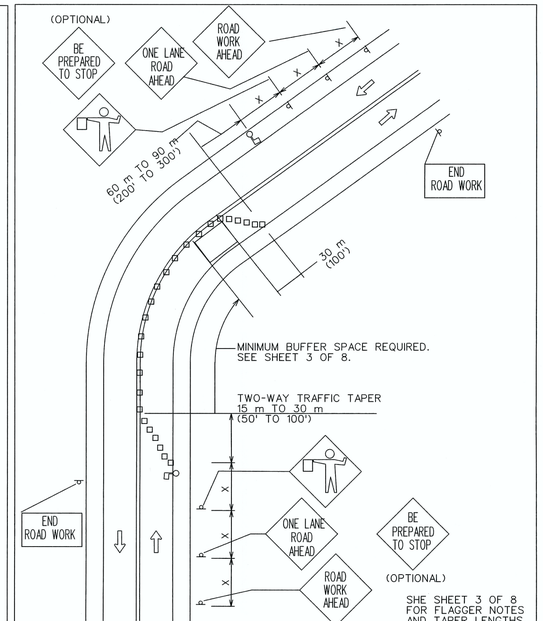
Speed KMPH	Posted Speed MPH	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet) 3.0(10) Offset Meters (feet)	3.3(11) Offset Meters (feet)	3.6(12) Offset Meters (feet)	Suggested Max. Device Spacing: On a taper Meters (feet)	On a tangent Meters (feet)	Suggested Sign Spacing Meters (Feet) "X" Dimension
50	30	L=WS²/60	45 (150)	50 (165)	55 (180)	9 (30)	15-20 (60-75)	40 (120)
55	35		65 (205)	70 (225)	75 (245)	10 (35)	25-25 (70-90)	50 (160)
65	40		80 (265)	90 (295)	100 (320)	12 (40)	25-30 (80-100)	75 (240)
70	45	L=WS	135 (450)	150 (495)	165 (540)	13 (45)	25-30 (90-110)	100 (320)
80	50		150 (500)	165 (550)	180 (600)	15 (50)	30-35 (100-125)	120 (400)
90	55		165 (550)	185 (605)	200 (660)	16 (55)	35-40 (110-140)	150 (500)
95	60		180 (600)	200 (660)	220 (720)	18 (60)	40-45 (120-150)	180 (600)
105	65		195 (650)	215 (715)	235 (780)	19 (65)	40-50 (130-165)	210 (700)
115	70		215 (700)	235 (770)	255 (840)	21 (70)	45-55 (140-175)	240 (800)

LEGEND
- Channelizing devices
- Trailer mounted flashing arrow board
- Flagger

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	DEVICE SPACING	
Kir Rueshaard-Gray 1/4/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-1 9 OF 9



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	COLLECTOR / RESIDENTIAL STREET FLAGGING OPERATIONS	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 1 OF 8



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	FLAGGER SETUP FOR 2 LANE ROADWAY	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 2 OF 8

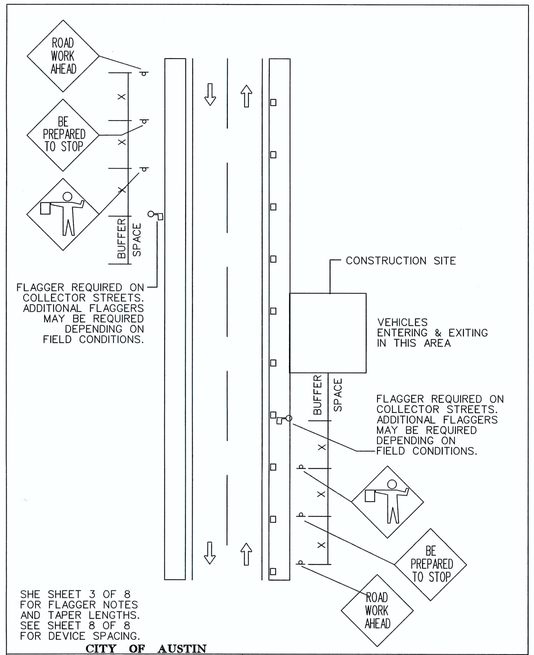
1. FOR DAYTIME WORK, THE FLAGGER SHALL WEAR AN APPROVED BRIGHTLY COLORED VEST. FOR NIGHTTIME WORK, THE VEST SHALL BE RETROFLECTIVE. THE RETRO-REFLECTIVE MATERIAL SHALL BE ORANGE, YELLOW, WHITE, SILVER, STRONG YELLOW-GREEN OR A FLOURESCENT VERSION OF THESE COLORS AND SHALL BE VISIBLE AT A MINIMUM DISTANCE OF 305 m (1,000').
2. FOR LOW-VOLUME APPLICATIONS, A SINGLE FLAGGER MAY BE ADEQUATE. WHERE ONE FLAGGER CAN BE USED, SUCH AS FOR SHORT WORK AREAS ON STRAIGHT ROADWAYS, THE FLAGGER MUST BE VISIBLE TO APPROACHING TRAFFIC FROM BOTH DIRECTIONS.
3. FLAGGERS SHALL USE ONLY STOP/SLOW PADDLE TO DIRECT TRAFFIC UNLESS WORKING IN A SIGNALIZED INTERSECTION WHERE DRIVERS MAY BE CONFUSED BY THE SIGN PADDLE. HAND SIGNAL MAY BE USED IN THESE SITUATIONS.
4. FLAGGERS SHALL ENSURE THAT ALL REQUIRED SIGNING IS IN PLACE PRIOR TO BEGINNING FLAGGING OPERATIONS.
5. FLAGGERS SHALL NOT PERFORM WORK THAT IS NOT RELATED TO FLAGGING WHILE ON DUTY.
6. FLAGGERS MAY CARRY AIR HORNS OR WHISTLES TO WARN WORKERS OF AN EMERGENCY CONDITION.
7. FLAGGERS SHALL BE REQUIRED TO USE TWO-WAY RADIOS WHEN OUT OF CLEAR VIEW OF EACH OTHER.
8. FLOODLIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.

TAPER LENGTHS

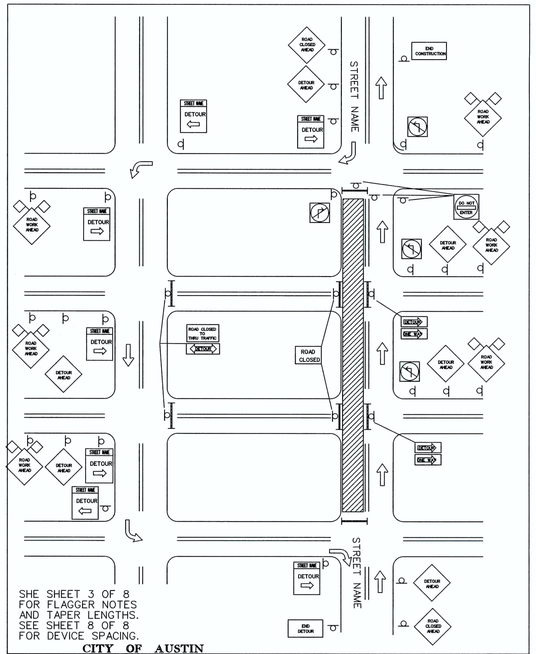
SPEED (kmph)	SPEED* (mph)	LENGTH (meters)	LENGTH (feet)
30	20	11	35
40	25	17	55
50	30	26	85
55	35	36	120
65	40	51	170
70	45	66	220
80	50	84	280
90	55	101	335
95	60	125	415
105	65	146	485

*POSTED SPEED

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	FLAGGER SETUP FOR 2 LANE ROADWAY	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 3 OF 8



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	FLAGGER SETUP FOR VEHICLES ENTERING AND EXITING WORK SITE	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 4 OF 8



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	STREET DETOUR SINGLE DIRECTION	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 5 OF 8

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 33 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____DWPZ ____DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2015

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

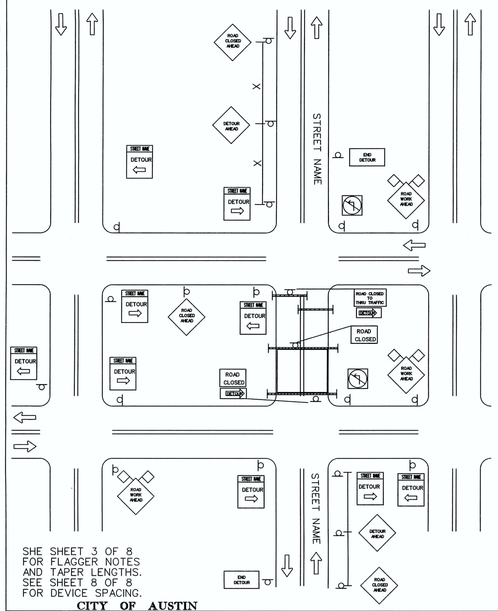
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 33 OF 45

G:\106960\10026\CD DWG\10696002681CD02.dwg modified by jthompson on Oct 21, 15 10:25 AM

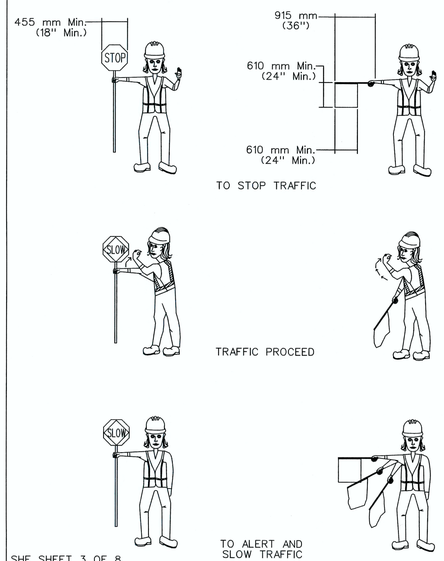
SP-2015-0337D



SHE SHEET 3 OF 8
FOR FLAGGER NOTES
AND TAPER LENGTHS.
SEE SHEET 8 OF 8
FOR DEVICE SPACING.

CITY OF AUSTIN

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STREET DETOUR BOTH DIRECTIONS	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 6 OF 8



SHE SHEET 3 OF 8
FOR FLAGGER NOTES.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		USE OF HAND SIGNALING DEVICES	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 7 OF 8

Typical Transition Lengths and Suggested Maximum Spacing of Devices

Speed KMPH	Posted Speed MPH	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet) 3.0(10) Offset Meters (feet)	3.3(11) Offset Meters (feet)	3.6(12) Offset Meters (feet)	Suggested Max. Device Spacing On a taper Meters (feet)	On a tangent Meters (feet)	Suggested Sign Spacing Meters (Feet) "X" Dimension
50	30	$L=\frac{WS^2}{60}$	45 (150)	50 (165)	55 (180)	9 (30)	15-20 (60-75)	40 (120)
55	35		65 (205)	70 (225)	75 (245)	10 (35)	25-25 (70-90)	50 (160)
65	40		80 (265)	90 (295)	100 (320)	12 (40)	25-30 (80-100)	75 (240)
70	45	L=WS	135 (450)	150 (495)	165 (540)	13 (45)	25-30 (90-110)	100 (320)
80	50		150 (500)	165 (550)	180 (600)	15 (50)	30-35 (100-125)	120 (400)
90	55		165 (550)	185 (605)	200 (660)	16 (55)	35-40 (110-140)	150 (500)
95	60		180 (600)	200 (660)	220 (720)	18 (60)	40-45 (120-150)	180 (600)
105	65		195 (650)	215 (715)	235 (780)	19 (65)	40-50 (130-165)	210 (700)
115	70		215 (700)	235 (770)	255 (840)	21 (70)	45-55 (140-175)	240 (800)

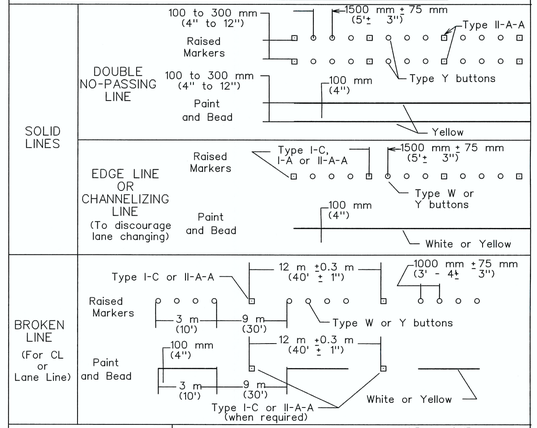
LEGEND
- Channelizing devices
- Trailer mounted flashing arrow board
- Flagger

TRAFFIC DETOUR NOTES:
1. "STREET CLOSED" AND "STREET CLOSED TO THRU TRAFFIC" MAY BE USED IN PLACE OF "ROAD CLOSED" AND "ROAD CLOSED TO THRU TRAFFIC".
2. THE USE OF A STREET SIGN NAME MOUNTED WITH THE M4-9 DETOUR SIGN** IS REQUIRED. THE STREET NAME PLATE SHOULD BE PLACED ABOVE THE DETOUR SIGN. THE PLATE MAY HAVE EITHER A WHITE-ON-GREEN OR A BLACK-ON-ORANGE LEGEND.
3. ADDITIONAL "DO NOT ENTER SIGNS" MAY BE DESIRABLE AT INTERSECTIONS WITH INTERVENING STREETS.
4. A M4-9 DETOUR SIGN** WITH AN ADVANCE TURN ARROW MAY BE USED IN ADVANCE OF A TURN. ON MULTI-LANE STREETS, SUCH SIGNS SHOULD BE USED.
5. M4-9 DETOUR SIGNS** MAY BE LOCATED ON THE FAR SIDE OF INTERSECTIONS.

** TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL LENGTHS & SPACING OF DEVICES, LEGEND and GENERAL NOTES	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-2 8 OF 8

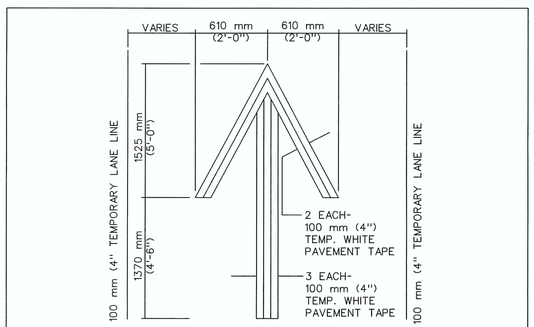
STANDARD WORK ZONE PAVEMENT MARKINGS DETAIL

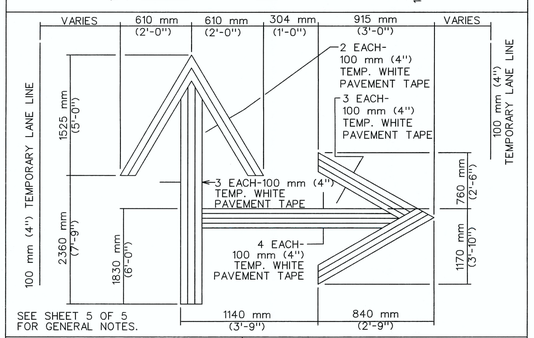


SEE STANDARD 804S-3
SHEET 5 OF 5
FOR GENERAL NOTES.

NOTE: IF RAISED PAVEMENT MARKERS ARE USED TO SUPPLEMENT REMOVABLE MARKINGS, THE MARKERS SHALL BE APPLIED TO THE TOP OF THE TAPE AT THE APPROXIMATE MID-LENGTH OF TAPE BROKEN LINES AND AT APPROXIMATE 6 m (20') SPACING FOR SOLID LINES. THIS ALLOWS AN EASIER REMOVAL OF RAISED MARKERS AND TAPE.

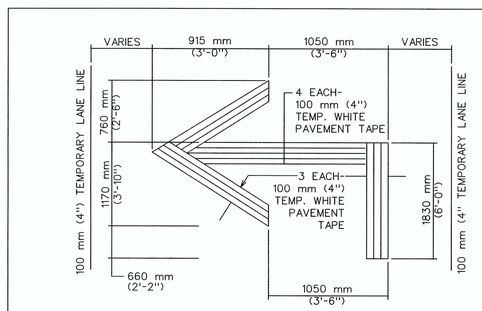
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TEMPORARY TRAFFIC CONTROL PAVEMENT MARKINGS	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-3 1 OF 5

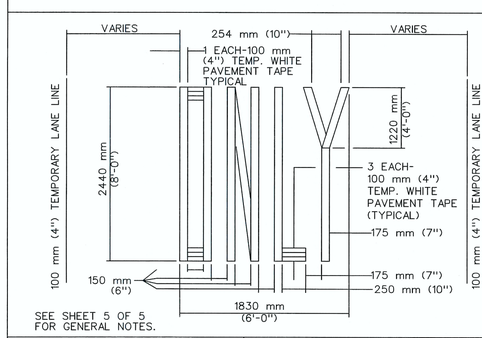




SEE SHEET 5 OF 5
FOR GENERAL NOTES.

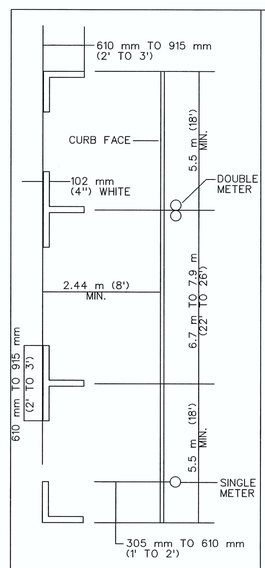
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TEMPORARY REMOVABLE TAPE, ARROWS AND LEGENDS	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-3 2 OF 5





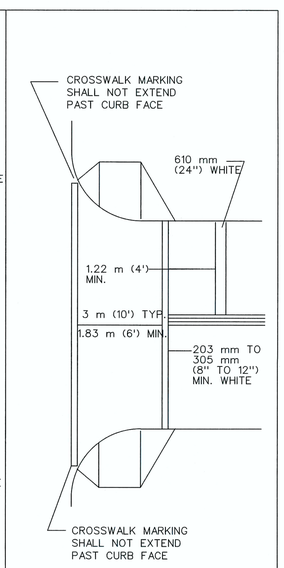
SEE SHEET 5 OF 5
FOR GENERAL NOTES.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TEMPORARY REMOVABLE TAPE, ARROWS AND LEGENDS	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-3 3 OF 5



PARKING STALLS

SEE SHEET 5 OF 5
FOR GENERAL NOTES.



CROSSWALK AND STOPBARS

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		PARKING STALLS, CROSSWALK AND STOP BARS	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-3 4 OF 5

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 34 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel: (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2015

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

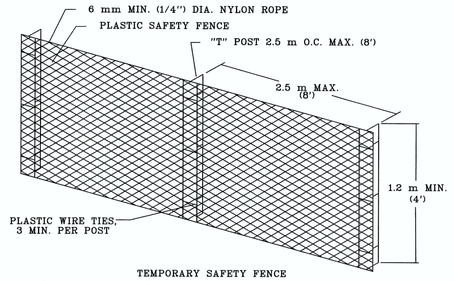
SHEET 34 OF 45

G:\106960\10026\CD DWG\106960026TCD03.dwg modified by jthompson on Oct 21, 15 10:25 AM

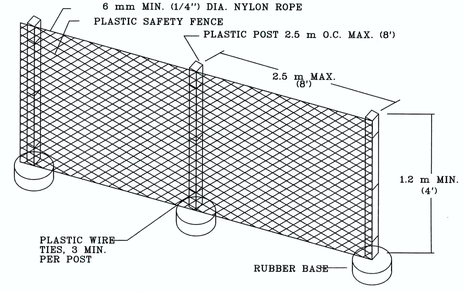
SP-2015-0337D

1. ALL PAVEMENT MARKINGS USED SHALL CONFORM TO THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY AND EXISTING PAVEMENT MARKINGS ON ALL ROADWAYS WITHIN THE CONSTRUCTION LIMITS AND ON ANY ROADWAY OUTSIDE THE CONSTRUCTION LIMITS THAT REQUIRES THE REROUTING OF TRAFFIC FOR HIS WORK.
3. ALL ROADWAYS TO BE OPENED TO TRAFFIC SHALL HAVE TEMPORARY OR STANDARD PAVEMENT MARKINGS INSTALLED AS SHOWN IN THE DRAWINGS, AT THE END OF EACH DAY'S OPERATION.
4. MARKINGS SHALL PROVIDE A VISIBLE REFERENCE FOR A MINIMUM DISTANCE OF 91.5 m (300') DURING NORMAL DAYLIGHT HOURS AND 49 m (160') WHEN ILLUMINATED BY AUTOMOBILE LOW-BEAM HEADLIGHTS AT NIGHT, UNLESS SIGHT DISTANCE IS RESTRICTED BY ROADWAY GEOMETRICS.
5. ALL TEMPORARY REMOVABLE PAVEMENT MARKINGS SHALL BE SUPPLEMENTED WITH RAISED PAVEMENT MARKERS.
6. TEMPORARY REMOVABLE PAVEMENT MARKING TAPE IS THE PREFERRED PAVEMENT MARKING; HOWEVER, THE CONTRACTOR MAY, WITH APPROVAL OF THE ENGINEER OR DESIGNATED REPRESENTATIVE, USE RAISED PAVEMENT MARKINGS, PAINT AND BEADS OR THERMOPLASTIC IF THE ROADWAY IS TO BE COMPLETELY RESURFACED.
7. PAVEMENT MARKINGS THAT ARE NO LONGER APPLICABLE AND WHICH MAY CREATE CONFUSION OR DIRECT A MOTORIST TOWARD OR INTO THE CLOSED PORTION OF THE ROADWAY, SHALL BE REMOVED OR OBLITERATED BEFORE THE ROADWAY IS OPENED TO TRAFFIC. THE ABOVE DOES NOT APPLY TO SHORT-DURATION, SHORT TERM STATIONARY OR INTERMEDIATE TERM STATIONARY WORK.
8. REMOVAL OR OBLITERATION OF PAVEMENT MARKINGS INCLUDES CENTERLINES, CHANNELIZING LINES, LANE LINES, EDGE LINES, WORDS, ARROWS, SYMBOLS AND RAISED PAVEMENT MARKINGS.
9. PAVEMENT MARKINGS SHALL BE REMOVED OR OBLITERATED TO THE FULLEST EXTENT POSSIBLE, SO AS NOT TO LEAVE A DISCERNIBLE MARK. GRINDING OF PAVEMENT MARKINGS WILL ONLY BE ALLOWED ON PAVEMENT THAT IS TO BE COMPLETELY REPLACED.
10. TEMPORARY FLEXIBLE-REFLECTIVE TABS MAY BE USED FOR TEMPORARY PAVEMENT MARKINGS ON NEW PAVEMENT, PROVIDED THEY ARE PLACED ON 1.5 m (5') CENTERS.
11. THE CONTRACTOR SHALL PLACE TEMPORARY FLEXIBLE-REFLECTIVE TABS IMMEDIATELY AFTER THE FINAL HMAC OVERLAY AS EACH LANE IS COMPLETED AND READY FOR TRAFFIC. NO DIRECT PAYMENT WILL BE MADE FOR THIS OPERATION, BUT WILL BE CONSIDERED SUBSIDIARY TO THE OTHER BID ITEMS. FINAL STRIPING SHOULD BE COMPLETED WITHIN FOURTEEN (14) DAYS OF THE FINAL PAVING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		GENERAL NOTES	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-3 5 OF 5



TEMPORARY SAFETY FENCE

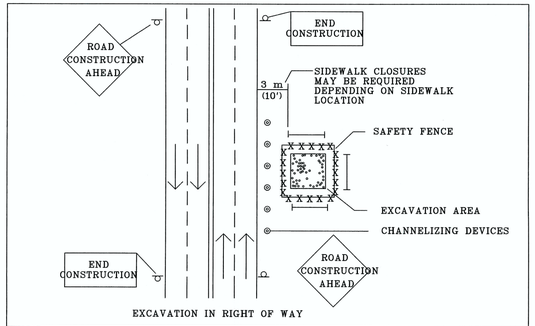


PORTABLE SAFETY FENCE

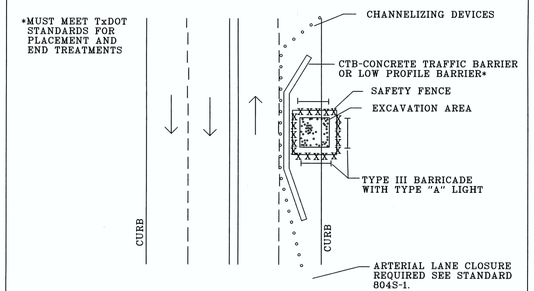
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SAFETY FENCE	
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-4 1 OF 9

1. SAFETY FENCE SHALL BE USED TO PROTECT ALL EXCAVATIONS IN THE RIGHT-OF-WAY.
2. SAFETY FENCES SHALL BE USED TO SEPARATE CONSTRUCTION ACTIVITIES FROM PEDESTRIAN.
3. ALL SAFETY FENCING SHALL BE PLASTIC, 1,200 mm (48") MINIMUM HEIGHT AND ORANGE IN COLOR.
4. SAFETY FENCE USED WITHIN THE ROADWAY SHALL BE REFLECTORIZED WITH A MINIMUM OF TWO (2) STRIPS OF RETROREFLECTIVE MATERIAL, A MINIMUM OF 25 mm (1") WIDE, THE LENGTH OF THE FENCE OR DELINEATED BY CHANNELIZING DEVICES.
5. SAFETY FENCE USED TO SEPARATE SIDEWALKS FROM CONSTRUCTION ACTIVITIES SHALL HAVE MINIMUM ENCROACHMENT TO THE SIDEWALK.
6. AS A MINIMUM, SAFETY FENCING IS REQUIRED IN AREAS ADJACENT TO EXCAVATIONS GREATER THAN OR EQUAL TO 150 mm (6").
7. SAFETY FENCING SHALL BE PAID FOR UNDER ITEM 803S, "BARRICADES, SIGNS AND TRAFFIC
8. PORTABLE SAFETY FENCE MOUNTS SHALL BE APPROVED BY THE TRANSPORTATION DIVISION PRIOR TO CONSTRUCTION.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SAFETY FENCE	
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-4 2 OF 9

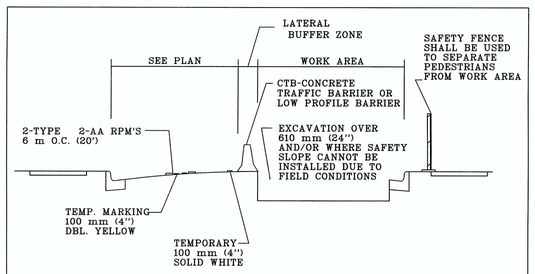


EXCAVATION IN RIGHT OF WAY

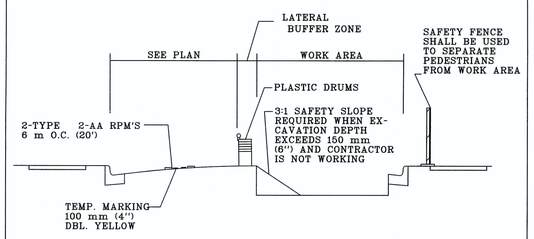


EXCAVATION IN ROADWAY

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		LARGE EXCAVATION	
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-4 3 OF 9

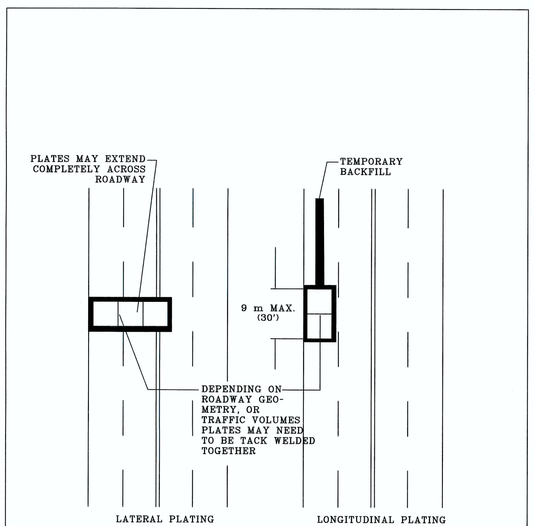


POSITIVE BARRIERS
TYPICAL CROSS SECTION

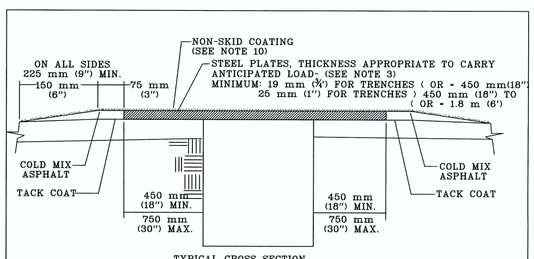


SAFETY SLOPE
TYPICAL CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		WORK AREA PROTECTION	
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-4 4 OF 9

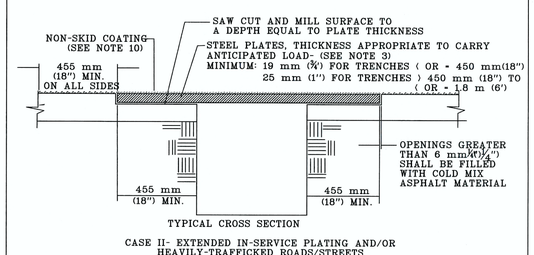


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STEEL PLATING	
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-4 5 OF 9



TYPICAL CROSS SECTION

CASE I- LOW TRAFFIC VOLUME/LIMITED IN-SERVICE TIME



TYPICAL CROSS SECTION

CASE II- EXTENDED IN-SERVICE PLATING AND/OR HEAVILY-TRAFFICKED ROADS/STREETS (HMAC PAVEMENTS ONLY)

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STEEL PLATING	
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-4 6 OF 9

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 35 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500

Copyright © 2015

5/6/2015
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 35 OF 45

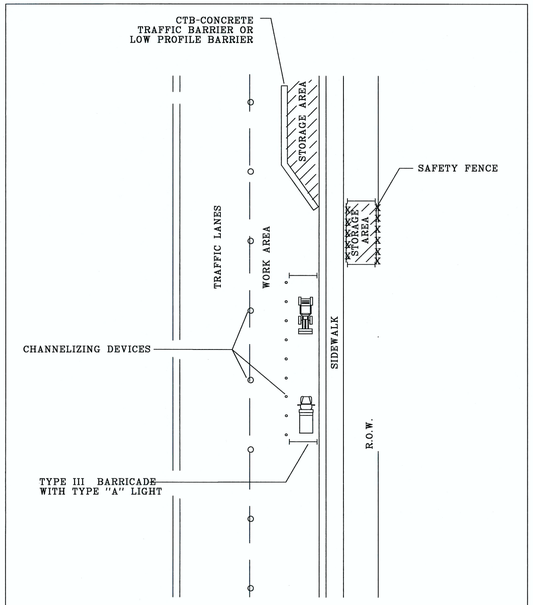
G:\10696\10026\CD DWG\10696026TCD04.dwg modified by jthompson on Oct 21, 15 10:25 AM

SP-2015-0337D

NOTES:

1. WHERE TRAFFIC MUST CROSS TRENCHES, THE CONTRACTOR SHALL PROVIDE SUITABLE BRIDGES.
2. THE USE OF STEEL PLATES SHALL BE APPROVED BY THE RIGHT OF WAY MANAGEMENT DIVISION OF WATERSHED PROTECTION AND DEVLOPMENT DEPARTMENT PRIOR TO INITIATION OF CONSTRUCTION.
3. THE THICKNESS OF PLATES FOR TRENCH WIDTHS EXCEEDING 1.8 m (6') SHALL BE ESTABLISHED IN AN ANALYSIS COMPLETED BY A LICENSED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF TEXAS. THE ANALYSIS SHALL BE BASED ON HS-20 TRAFFIC LOADING WITH A MAXIMUM PLATE DEFLECTION OF 50 mm (2") WHEN EXPERIENCING SAID LOADING. FOR SITUATIONS WHERE MULTIPLE LAYERS OF PLATES (OR STACKED PLATES) ARE TO BE EMPLOYED, THE SEAMS (IE. THE INTER-FACE BETWEEN PLACED SIDE-BY-SIDE) OF THE UPPER LAYER SHALL BE PLACED PERPENDICULAR TO THE SEAMS OF THE UNDERLYING PLATES.
4. WHEN APPROVED, THE TYPE OF PLATE INSTALLATION SHALL BE BASED ON THE ANTICIPATED LENGTH OF TIME THE PLATE WILL BE IN SERVICE:
   CASE I: A CASE I INSTALLATION SHALL APPLY FOR NO LONGER THAN A 2 WEEK PERIOD.
   CASE II: A CASE II INSTALLATION SHALL APPLY FOR NO LONGER THAN 2 WEEK PERIOD.
5. THE TOPSIDE OF THE STEEL PLATE SHALL BE FLAT AND FREE OF ANY CLIPS, CHAINS, ATTACHMENTS, WELDMENTS OR SURFACE IRREGULARITIES.
6. PLATES WITH A PERMANENT DISPLACEMENT (I.E. DISPLACEMENT ANYWHERE ON THE SURFACE OF THE PLATE WITH RESPECT TO A PLANE FORMED BY THE OUTSIDE EDGES) THAT EXCEEDS 12 mm (½") SHALL NOT BE USED FOR PLATING PURPOSES. PLATES THAT DEVELOP A PERMANENT DISPLACEMENT EXCEEDING 12 mm (½") DURING SERVICE SHALL BE REMOVED AND REPLACED.
7. THE PLATES SHALL BE PROVIDED WITH APPROPRIATE NUMBER OF KEYHOLE SLOTS OR CIRCULAR HOLES FOR HANDLING, LIFTING, INSTALLATION AND REMOVAL PURPOSES.
8. THE CONTRACTOR SHOULD AVOID USING A LONG SERIES OF PLATES THAT RUN PARALLEL TO VEHICULAR TRAFFIC WHEELS PATHS.
9. ADDITIONAL METHODS OF SECURING PLATES MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS.
10. FOR PLATES 1.8 M (6') OR GREATER IN DIRECTION OF TRAFFIC, A NON-SKID COATING SHOULD BE APPLIED TO THE ENTIRE SURFACE AREA OF ALL PLATES, AS WELL AS ADJACENT AREAS. THE NON-SKID COATING SHALL BE TCA (TEXTURED COATING OF AMERICA, INC.) STRATA-GRIP DECK COATING SYSTEM: SLIPFIX, INC. SPS (SLIP PROTECTION SURFACE) OR AN EQUIVALENT PRODUCT APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

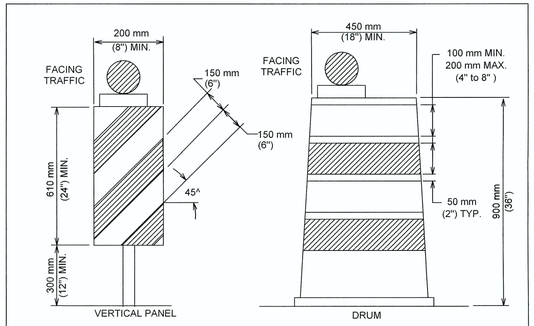
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STEEL PLATING	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-4
ADOPTED			7 OF 9



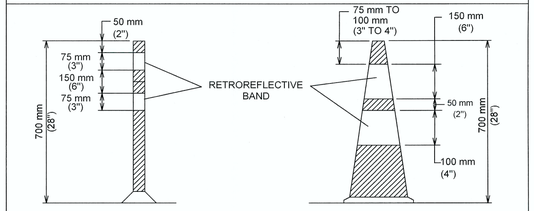
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		MATERIAL AND EQUIPMENT STORAGE	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-4
ADOPTED			8 OF 9

1. STORAGE OF EQUIPMENT AND MATERIALS SHALL BE RESTRICTED TO LOCATIONS WHERE DRIVER SIGHT DISTANCES TO TRAFFIC, PEDESTRIANS, BUSINESSES AND SIDE STREET INTERSECTIONS ARE NOT OBSTRUCTED OR WHERE AN UNSIGHTLY APPEARANCE. AS DETERMINED BY THE ENGINEER, WILL NOT EXIST.
2. EQUIPMENT MUST BE PARKED AS FAR AWAY FROM THE TRAVELWAYS AS PRACTICAL.
3. TOTAL AREA USED FOR EQUIPMENT STORAGE SHALL BE KEPT TO A MINIMUM.
4. ALL MATERIALS STORED IN THE RIGHT-OF-WAY MUST BE MAINTAINED IN A NEAT AND ORGANIZED MANNER.
5. MATERIALS STORED MAY NOT BE MORE THAN 915 mm (36") IN HEIGHT.
6. ALL MATERIALS STORED MUST BE USED WITHIN THREE (3) DAYS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		MATERIAL AND EQUIPMENT STORAGE	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	04/03/09	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-4
ADOPTED			9 OF 9



LONG TERM AND INTERMEDIATE TERM STATIONARY WORK



SHORT TERM AND SHORT DURATION WORK

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		CHANNELIZING DEVICES	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-5
ADOPTED			1 OF 13

CHANNELIZING DEVICES

1. ALL CHANNELIZING DEVICES SHALL HAVE WARNING LIGHTS OR LARGE REFLECTORS WHEN USED AT NIGHT. FLASHING WARNING LIGHTS MAY BE PLACED ON CHANNELIZING DEVICES USED SINGULARLY OR IN GROUPS TO MARK A SPOT CONDITION. WARNING LIGHTS ON CHANNELIZING DEVICES USED IN A SERIES SHALL BE STEADY-BURN. CHANNELIZING DEVICES IN TAPERS AT NIGHT SHALL HAVE TYPE C WARNING LIGHTS.
2. THE RETROREFLECTIVE MATERIAL USED ON CHANNELIZING DEVICES SHALL HAVE A SMOOTH, SEALED OUTER SURFACE.
3. THE NAME AND TELEPHONE NUMBER OF THE AGENCY, CONTRACTOR OR SUPPLIER SHALL BE SHOWN ON THE NON-RETROREFLECTIVE SURFACE OF ALL CHANNELIZING DEVICES. THE LETTERS AND NUMBERS SHALL BE A NON-RETROREFLECTIVE COLOR AND NOT OVER 50 mm (2") IN HEIGHT.
4. PARTICULAR ATTENTION SHOULD BE GIVEN TO ASSURE THAT CHANNELIZING DEVICES ARE MAINTAINED AND KEPT CLEAN, VISIBLE AND PROPERLY POSITIONED AT ALL TIMES. DEVICES SHALL BE REPLACED THAT ARE DAMAGED AND HAVE LOST A SIGNIFICANT AMOUNT OF THEIR RETROREFLECTIVITY AND EFFECTIVENESS.

CONES

CONES SHALL PREDOMINANTLY BE ORANGE, FLUORESCENT RED-ORANGE, OR FLUORESCENT YELLOW-ORANGE IN COLOR, NOT LESS THAN 70 mm (28") IN HEIGHT, AND SHALL BE MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT. FOR NIGHT TIME USE, CONES SHALL BE RETROREFLECTIVE OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. RETROREFLECTION OF CONES SHALL BE PROVIDED BY A WHITE BOND 150 mm (6") WIDE, NO MORE THAN 75 TO 100 mm (3 TO 4") FROM THE TOP OF THE CONE, AND AN ADDITIONAL 100 mm (4") WHITE BAND A MINIMUM OF 50 mm (2") BELOW THE 150 mm (6") BAND. TRAFFIC CONES ARE NORMALLY USED FOR SHORT-TERM STATIONARY AND SHORT DURATION WORK. HOWEVER, CONES MAY BE USED FOR INTERMEDIATE-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED.

TUBULAR MARKERS

TUBULAR MARKERS SHALL PREDOMINANTLY BE ORANGE IN COLOR, NOT LESS THAN 700 mm (28") IN HEIGHT , A MINIMUM 50 mm (2") WIDE WHEN FACING TRAFFIC AND MADE OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES. FOR NIGHT TIME USE, TUBLULAR MARKERS SHALL BE RETROREFLECTIVE PROVIDED BY TWO (2) 75 mm (3") WIDE WHITE BANDS PLACED A MAXIMUM OF 50 mm (2") FROM THE TOP, WITH A MAXIMUM OF 150 mm (6") BETWEEN BANDS. TUBULAR MARKERS ARE NORMALLY USED FOR SHORT-TERM STATIONARY AND SHORT DURATION WORK. HOWEVER, TUBULAR MARKERS MAY BE USED FOR INTERMEDIATE-TERM STATIONARY WORK AT NIGHT, IF THE SITE IS CONTINUOUSLY MANNED.

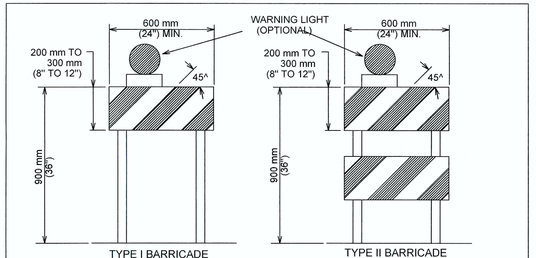
VERTICAL PANELS

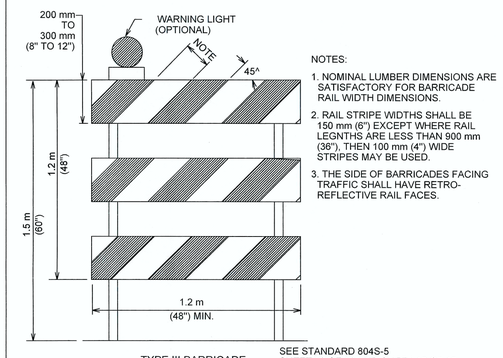
VERTICAL PANELS SHALL BE 200 TO 300 mm (8 TO 12") WIDE AND AT LEAST 600 mm (24") IN HEIGHT. THEY SHALL HAVE ORANGE AND WHITE STRIPES, AND BE RETROREFLECTIVE. PANEL STRIPE WIDTHS SHALL BE 150 mm (6") EXCEPT WHERE PANEL HEIGHTS ARE LESS THAN 900 mm (36"), WHEN 100 mm (4") STRIPES MAY BE USED. IF USED FOR TWO-WAY TRAFFIC, BACK-TO-BACK PANELS SHALL BE USED.

DRUMS

1. DRUMS USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE CONSTRUCTED OF LIGHT-WEIGHT FLEXIBLE AND DEFORMABLE MATERIALS AND BE A MINIMUM OF 900 mm (36") IN HEIGHT, AND HAVE AT LEAST 450 mm (18") MINIMUM WIDTH, REGARDLESS OF ORIENTATION. STEEL DRUMS SHALL NOT BE USED. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUNFERENTIAL, ALTERNATING ORANGE AND WHITE RETROREFLECTIVE STRIPES 100 TO 200 mm (4 TO 8") WIDE. EACH DRUM SHALL HAVE A MINIMUM OF TWO (2) ORANGE AND TWO (2) WHITE STRIPES. ANY NON-RETROREFLECTIVE SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, SHALL NOT EXCEED 50 mm (2") WIDE. DRUMS SHALL HAVE CLOSED TOPS THAT WILL NOT ALLOW COLLECTION OF ROADWORK OR OTHER DEBRIS.
2. DRUMS SHOULD NOT BE WEIGHTED WITH SAND, WATER OR ANY MATERIAL TO AN EXTENT THAT WOULD MAKE THE HAZARDOUS TO MOTORISTS, PEDESTRIANS OR WORKERS. WHEN THEY ARE USED IN REGIONS SUSCEPTIBLE TO FREEZING, THEY SHOULD HAVE DRAINAGE HOLES IN THE BOTTOM SO WATER WILL NOT ACCUMULATE AND FREEZE,CAUSING A HAZARD IF STRUCK BY A MOTORIST. BALLAST SHALL NOT BE PLACED ON TOP OF THE DRUM.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		CHANNELIZING DEVICES	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-5
ADOPTED			2 OF 13





NOTES:

1. NOMINAL LUMBER DIMENSIONS ARE SATISFACTORY FOR BARRICADE RAIL WIDTH DIMENSIONS.
2. RAIL STRIPE WIDTHS SHALL BE 150 mm (6") EXCEPT WHERE RAIL LEGNTHS ARE LESS THAN 900 mm (36"), THEN 100 mm (4") WIDE STRIPES MAY BE USED.
3. THE SIDE OF BARRICADES FACING TRAFFIC SHALL HAVE RETRO-REFLECTIVE RAIL FACES.

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		BARRICADES	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-5
ADOPTED			3 OF 13

BARRICADES

1. BARRICADES SHALL BE OF THREE TYPES: TYPE I, TYPE II OR TYPE III.
2. STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETRO-REFLECTIVE STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS). THE STRIPES SHALL BE 150 mm (6") WIDE, EXCEPT WHERE RAIL LENGTHS ARE LESS THAN 900 mm (36"), WHEN 100 mm (4") WIDE STRIPES MAY BE USED.
3. WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, THE SURFACE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE STRIPES MAY SLOPE DOWN-WARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.
4. BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE MOTORIST AND PROVIDE A STABLE SUPPORT NOT EASILY BLOWN OVER BY THE WIND OR TRAFFIC. FOR TYPE I BARRICADES, THE SUPPORT MAY INCLUDE OTHER UNSTRIPED HORIZONTAL PANELS NECESSARY TO PROVIDE STABILITY.
5. BARRICADES ARE LOCATED ADJACENT TO TRAFFIC AND ARE THEREFORE SUBJECT TO IMPACT WITH ERRANT VEHICLES. BECAUSE OF THEIR VULNERABLE POSITION AND THE HAZARD THEY COULD CREATE, THEY SHOULD BE CONSTRUCTED OF LIGHTWEIGHT MATERIALS AND HAVE NO RIGID STAY BRACING FOR A-FRAME DESIGNS. ALL BARRICADE SYSTEMS SHOULD BE CRASHWORTHY.
6. ON HIGH-SPEED EXPRESSWAYS OR IN OTHER SITUATION WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURING IN THE WIND, SANDBAGS SHOULD BE USED FOR BALLASTING. SANDBAGS MAY BE PLACED ON PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		BARRICADES	STANDARD NO.
RECORD COPY SIGNED BY SAM ANGOORI	01/04/10	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	804S-5
ADOPTED			4 OF 13

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 36 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500

Copyright © 2015

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

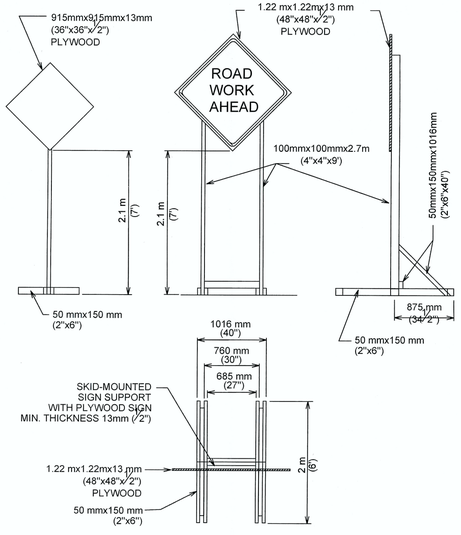
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 36 OF 45

G:\1069601\10026\CD DWG\1069600226TCD05.dwg modified by jthompson on Oct 21, 15 10:25 AM

SP-2015-0337D

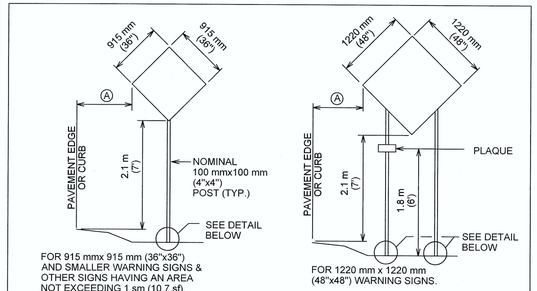


(LONG TERM AND INTERMEDIATE-TERM STATIONARY WORK)

TEMPORARY SIGN SUPPORT

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

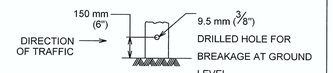
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC CONTROL SIGNS	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 5 OF 13



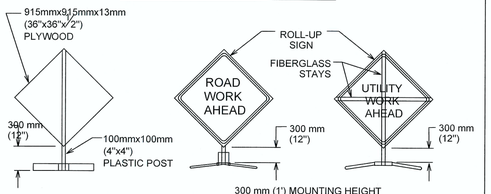
FOR 915 mmx 915 mm (36"x36") AND SMALLER WARNING SIGNS & OTHER SIGNS HAVING AN AREA NOT EXCEEDING 1 sm (10.7 sf).

FOR 1220 mm x 1220 mm (48"x48") WARNING SIGNS.

Ⓐ 610 mm (2') MINIMUM
(REFER TO TMUTCD)



WOOD POST SIGN SUPPORT USED AS FIXED SIGN SUPPORTS



300 mm (1') MOUNTING HEIGHT
(SHORT TERM AND SHORT DURATION WORK)

PORTABLE SIGN SUPPORT

SEE STANDARD 804S-5
SHEET 12 OF 13 AND
SHEET 13 OF 13 FOR
GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC CONTROL SIGNS	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 6 OF 13

1. WARNING SIGNS SHALL BE ORANGE, FLUORESCENT RED-ORANGE OR FLUORESCENT YELLOW-ORANGE IN COLOR. THE FLUORESCENT VERSIONS OF ORANGE PROVIDE HIGHER CONSPICUITY THAN STANDARD ORANGE, ESPECIALLY DURING TWILGHT. ALL SIGNS USED AT NIGHT SHALL BE EITHER RETRORE-FLECTIVE, WITH A MATERIAL THAT HAS A SMOOTH, SEALED OUTER SURFACE, OR ILLUMINATED TO SHOW SIMILAR SHAPE AND COLOR BOTH DAY AND NIGHT. SIGN ILLUMINATION MAY BE EITHER IN-TERNAL OR EXTERNAL. ROADWAY LIGHTING DOES NOT MEET THE REQUIREMENTS FOR SIGN ILLUMINATION.
2. TYPE A FLASHING WARNING LIGHTS MAY BE USED IN CONJUNCTION WITH SIGNS AT NIGHT. STANDARD ORANGE FLAGS MAY BE USED FOR DAY TIME OPERATIONS. HOWEVER, NEITHER LIGHTS NOR FLAGS MAY BLOCK THE SIGN LEGEND.
3. SIGNS SHOULD BE LOCATED ON THE RIGHT-HAND SIDE OF THE ROADWAY. WHEN SPECIAL EMPHASIS IS NEEDED, SIGNS MAY BE PLACE ON BOTH THE LEFT AND RIGHT SIDES OF ROADWAY. SIGNS SHALL BE PLACED ON BOTH THE LEFT AND RIGHT SIDES OF ONE-WAY OR DIVIDED ROADWAYS. SIGNS USED FOR LONG-TERM STATIONARY AND INTERMEDIATE-TERM STATIONARY WORK SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 2.1 m (7'), MEASURED FROM THE BOTTOM OF THE SIGN. THE HEIGHT TO THE BOTTOM OF A SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 0.3 m (1') LESS THAN THE APPROPRIATE HEIGHT ABOVE.
4. SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, MOBILE CON-DITIONS AND EMERGENCIES. SIGNS MOUNTED ON PORTABLE SUPPORTS SHALL BE AT A HEIGHT OF AT LEAST 0.3 m (1'), MEASURED FROM THE BOTTOM OF THE SIGN.
5. ALL SIGN SYSTEMS SHOULD BE CRASHWORTHY. NO SIGN MOUNTS SHALL BLOCK OR IMPEDE SIDEALKS UNLESS NO OTHER OPTION IS AVAILABLE. ONLY SANDBAGS SHOULD BE USED FOR BALLASTING SIGN MOUNTS.

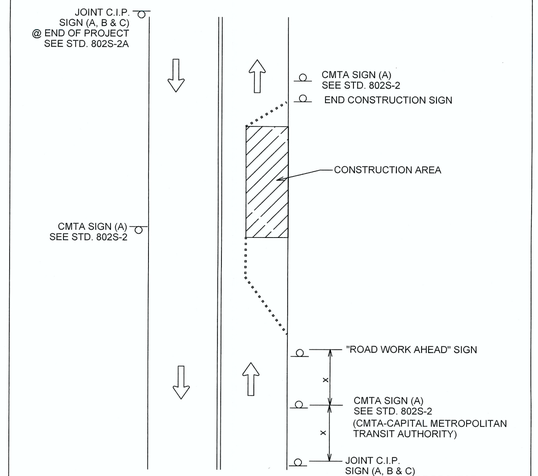
TABLE VI-3 TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Roadway Classi fication	Posted Speed	Sign Spacing ★	Long-term Stationary Or Intermediate-term Stationary Approaching Warning Signs CW20 Series And CW22-1 Sign		Short-term Stationary Or Short Duration Approach Warning Signs CW22 Series		Other Warning Signs
			Standard	Minimum[4]	Standard	Minimum[4]	Standard
Conven.	KPH (MPH)	meter (feet)	mm (inches)	mm (inches)	mm (inches)	mm (inches)	mm (inches)
	50 (30)	40 (120)	1220x1220 (48x48)	915x915 (36x36)			
	55 (35)	50 (160)			915x915 (36x36)		915x915 (36x36)
	65 (40)	75 (240)					
	70 (45)	100 (320)		Use Standard Size		Use Standard Size	
	80 (50)	120 (400)					
	90 (55)	150 (500) [2]					
	100 (60)	180 (600) [2]			1220x1220 (48x48)		1220x1220 (48x48)
	105 (65)	210 (700) [2]					
	115 (70)	240 (800) [2]			★★★	★★★	★★★
Exp. or Fwy	★★	★★ [3]					

★ MINIMUM DISTANCE FROM WORK TO 1st ADVANCE WARNING SIGN AND/OR DISTANCE BETWEEN EACH ADDITIONAL SIGN.
★★ FOR TYPICAL SIGN SPACINGS ON EXPRESSWAYS AND FREEWAYS, REFER TO THE CURRENT ADDITION OF TMUTCD.
★★★ SMALLER SIGN SIZES MAY BE USED WHERE SIGN DESIGNS HAVE NOT BEEN INCLUDED IN THE "STANDARD HIGHWAY SIGNS DESIGN MANUAL".

1. SPECIAL OR LARGER SIZE SIGNS MAY BE USED AS NECESSARY.
2. DISTANCE BETWEEN SIGNS SHOULD BE INCREASED AS REQUIRED TO HAVE 450 m (1500') OR MORE ADVANCE WARNING.
3. DISTANCE BETWEEN SIGNS SHOULD BE INCREASED AS REQUIRED TO HAVE A 0.8 km (½ MILE) OR MORE ADVANCE WARNING.
4. FOR USE ONLY ON SECONDARY ROADS OR CITY STREETS WHERE SPEEDS ARE LOW.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC CONTROL SIGNS	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 7 OF 13

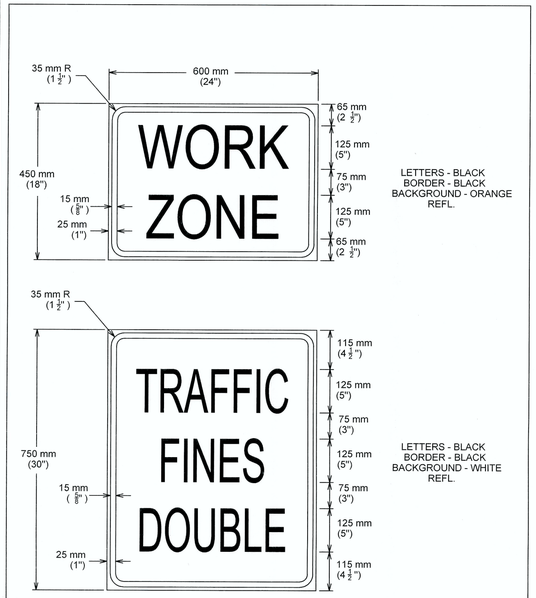


NOTES:

1. OTHER REQUIRED SIGNS NOT SHOWN FOR CLARITY.
2. "X" DISTANCES SAME AS STANDARD TABLE SHOWN ON SHEET 13 OF 13.

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL CMTA/C.I.P. SIGN LOCATIONS	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 8 OF 13

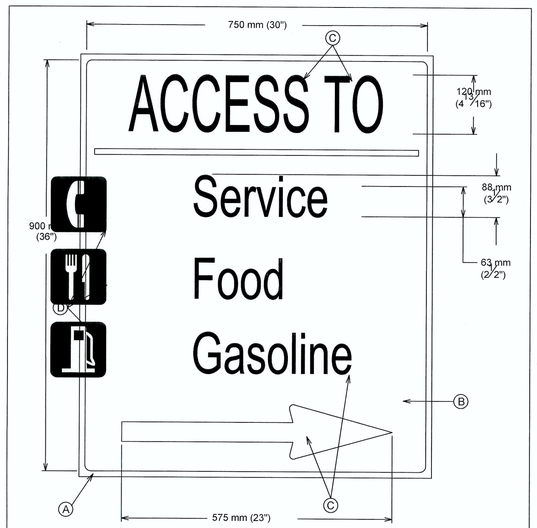


LETTERS - BLACK
BORDER - BLACK
BACKGROUND - ORANGE
REFL.

LETTERS - BLACK
BORDER - BLACK
BACKGROUND - WHITE
REFL.

SEE STANDARD DETAIL 804S-5
SHEET 5 OF 13 FOR SKID-
MOUNTED SIGN SUPPORT.

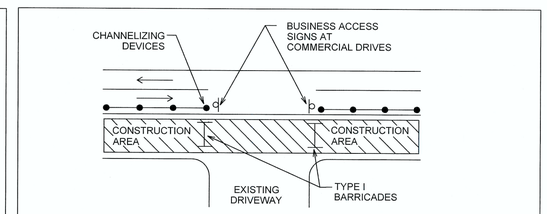
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SPECIAL WORK ZONE SIGNS	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 9 OF 13



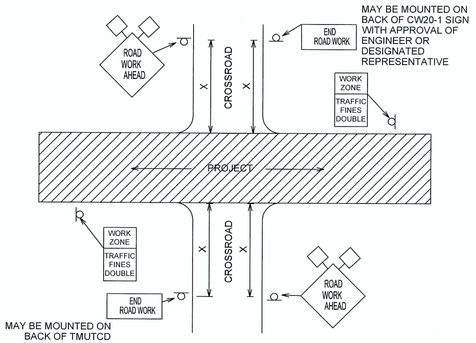
Ⓐ 50 mm (½") WHITE RETROREFLECTIVE BORDER
Ⓑ BLUE RETROFEFLECTIVE BACKGROUND
Ⓒ WHITE RETRORFLECTIVE ARROW AND LETTERS
Ⓓ WHITE RETROREFELCTIVE BUSINESS LOGO

NOTES:
1. CONTRACTORS CAN MAKE BUSINESS NAMES REMOVABLE/CHANGEABLE AS AN OPTION.
2. BUSINESS LOGO ARE OPTIONAL. IF USED LETTERING MUST BE MINIMIZED.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SPECIAL WORK ZONE SIGNS	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 10 OF 13



DRIVEWAY ACCESS BARRICADE DETAIL



MAY BE MOUNTED ON
BACK OF TMUTCD
CW20-1 SIGN WITH
APPROVAL OF ENGINEER
OR DESIGNATED
REPRESENTATIVE
(TMUTCD-TEXAS MANUAL
FOR UNIFORM TRAFFIC
CONTROL DEVICES)

CROSSROAD SIGNING AND BARRICADING

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIGNING AND BARRICADING CROSSROAD & DRIVEWAY	
RECORD COPY SIGNED BY SAM ANGOORI	*01/04/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 11 OF 13

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 37 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1. _____ Correction 1 _____
Rev. 2. _____ Correction 2 _____
Rev. 3. _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500

Copyright © 2015

5/6/20
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 37 OF 45

G:\106960\10026\CD DWG\106960026TCD06.dwg modified by jthompson on Oct 21, 15 10:31 AM

SP-2015-0337D

1. ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES AND WARNING SIGNS SHALL BE FURNISHED, PLACED, CONSTRUCTED AND MAINTAINED IN THE APPROPRIATE TYPES AND SIZES AND FLAGGER OPERATIONS EXECUTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM CONTROL DEVICES (TMUTCD), THE CITY OF AUSTIN STANDARD SPECIFICATIONS SERIES 800 AND THE CITY OF AUSTIN TRANS-PORTATION CRITERIA MANUAL, OR AS DIRECTED BY THE ENGINEER OR DESIGNATED RE-PRESENTATIVE. IF A CONFLICT ARISES THEN THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL SHALL CONTROL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
2. THE CONTRACTOR SHALL NOTIFY THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-7024 NO LATER THAN THE MONDAY OF THE WEEK DURING WHICH THE CONTRACTOR INTENDS TO SET UP BARRICADES TO START CONSTRUCTION.
3. PROPOSED CONSTRUCTION TRAFFIC MOVEMENTS MAY REQUIRE EXISTING SIGNAL HEADS TO BE RELOCATED. THE CITY OF AUSTIN WILL REVIEW SIGNAL HEAD LOCATIONS DURING CONSTRUCTION AND PERFORM THE REQUIRED ADJUSTMENTS. THE CONTRACTOR SHALL CONTACT THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-7024, THREE (3) DAYS PRIOR TO PLACMENT ANY TRAFFIC CONTROLS WHICH MAY REQUIRE SIGNAL HEAD ADJUSTMENTS/RELOCATION.
4. THE CONTRACTOR SHALL PROVIDE ONE (1) FULL-TIME OFF-DUTY, UNIFORMED AUSTIN POLICE DEPARTMENT CERTIFIED PEACE OFFICER AND ONE (1) VEHICLE OF THE TYPE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE FOR TEMPORARY LANE CLOSURES WHEN UNDERSEALING, MILLING, PAVING AND WHEN WORKING IN INTERSECTIONS AS PART OF THE TRAFFIC CONTROL OPERATIONS. THE PEACE OFFICER SHALL BE ABLE TO SHOW PROOF OF CERTIFICATION BY THE TEXAS COMMISSION ON LAW ENFORCEMENT OFFICER STANDARDS.
5. THE CONTRACTOR SHALL NOTIFY ALL OTHER GOVERNMENTAL AGENCIES WHOSE RIGHTS-OF-WAY ARE AFFECTED BY HIS WORK ACTIVITIES. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT THEY MAY NEED.
6. THE CONTRACTOR SHALL MAINTAIN ONE (1) DUST-FREE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR APPROVED THE ENGINEER OR DESIGNATED REPRESENTATIVE.
7. THERE SHALL BE A MINIMUM OF THREE (3) METERS (10 FEET) CLEAR WIDTH FOR EACH LANE OF TRAFFIC IN CHANNELIZED AREAS, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER OR DESIGNATED REPRESENTATIVE SHALL PROVIDE AT LEAST 24 HOUR WRITTEN NOTICE OF LIMITED ACCESS TO AFFECTED PROPERTY OWNERS. THE CONTRACTOR SHALL PROVIDE BUSINESS ACCESS SIGNS AS NEEDED TO NFORM DRIVERS OF THE LOCATIONS OF ALL DRIVEWAYS.
9. TEMPORARY LANE CLOSURES IN THE CENTRAL BUSINESS DISTRICT (CBD) OR ON ARTERIAL STREETS SHALL NOT BE PERMITTED DURING THE HOURS OF 7 AM TO 9 AM AND 4 PM TO 6PM MONDAY THROUGH FRIDAY UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE TRANSPORTATION DIVISION.
10. TRAFFIC CONTROL SHOWN ON STANDARD DETAILS IS TYPICAL. ADDITIONAL SIGNING AND/OR BARRICADING, AS WELL AS TEMPORARY PAVEMENT MARKINGS AND OBLITERATION/RESTORATION OF EXISTING PAVEMENT MARKINGS, MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS. FIELD ADJUSTMENTS TO TRAFFIC CONTROLS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM NO. 803S "BARRICADES, SIGNS AND TRAFFIC HANDLING".
11. THE CONTRACTOR SHALL DESIGNATE A COMPETENT PERSON FOR TRAFFIC CONTROL. THE COMPETENT PERSON SHALL MAKE INSPECTIONS OF THE TRAFFIC CONTROL DEVICES AT LEAST TWO (2) TIMES A DAY (ONCE AT THE BEGINNING OF THE DAY AND ONCE AT THE END OF THE DAY), INCLUDING NON-WORKING DAYS, ENSURING THAT ALL DEVICES ARE IN THEIR PROPER PLACE AND ARE IN WORKING ORDER.
12. ALL DEVICES SHALL BE MADE USING MATERIALS LISTED ON THE TxDOT APPROVED PRODUCTS LIST.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GENERAL TRAFFIC CONTROL NOTES	
RECORD COPY SIGNED BY SAM ANGOORI — *01/04/10* — ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 12 OF 13

13. ALL PERSONS WORKING WITHIN THE RIGHT-OF-WAY SHALL WEAR A BRIGHTLY COLORED SAFETY VEST. FOR NIGHTTIME WORK THE VEST SHALL BE RETROREFLECTIVE,
14. WHEN AN INTERSECTION IS CLOSED FOR CONSTRUCTION, THE CONTRACTOR SHALL PROCEED WITH CONSTRUCTION IN SUCH A MANNER THAT THE CLOSURE TIME IS MINIMIZED.
15. THE CONTRACTOR SHALL NOTIFY THE CAPITAL METRO DISPATCHER AT 385-4295 ONE (1) WEEK PRIOR TO LANE CLOSURES ADJACENT TO BUS STOPS.

DURATION OF WORK

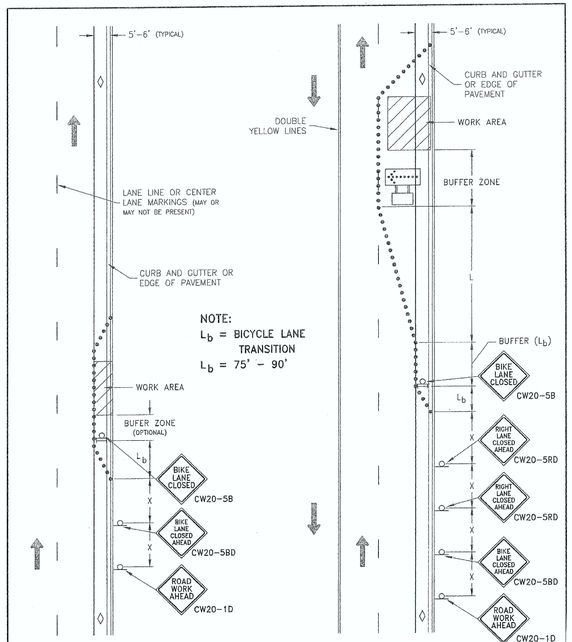
WORK DURATION IS A MAJOR FACTOR IN DETERMINING THE NUMBER AND TYPES OF DEVICES USED IN TEMPORARY TRAFFIC ZONES. THE FIVE (5) CATEGORIES OF WORK DURATION AND THEIR TIME AT A LOCATION ARE AS FOLLOWS:

- LONG-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FOR MORE THAN 3 DAYS.
- INTERMEDIATE-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FROM OVERNIGHT TO 3 DAYS.
- SHORT-TERM STATIONARY-DAYTIME WORK THAT OCCUPIES A LOCATION FROM 1 TO 12 HOURS.
- SHORT-DURATION WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
- MOBILE-WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

Typical Transition Lengths and Suggested Maximum Spacing of Devices

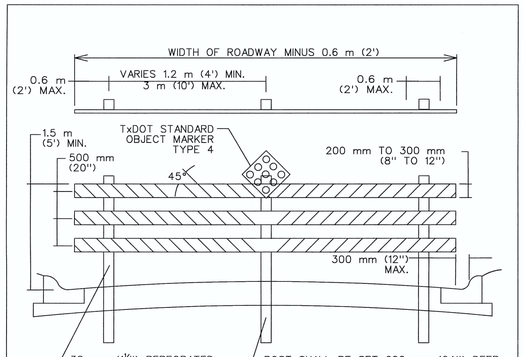
Posted Speed KPH (MPH)	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet) 3.0(10) Offset Meters (feet)	3.3(11) Offset Meters (feet)	3.6(12) Offset Meters (feet)	Suggested Max. Device Spacing On a taper Meters (feet)	On a tangent Meters (feet)	Suggested Sign Spacing Meters (Feet) "X" Dimension
50 (30)	L=WS²/60	45 (150)	50 (165)	55 (180)	9 (30)	15-20 (60-75)	40 (120)
55 (35)		65 (205)	70 (225)	75 (245)	10 (35)	25-25 (70-90)	50 (160)
65 (40)		80 (265)	90 (295)	100 (320)	12 (40)	25-30 (80-100)	75 (240)
70 (45)	L=WS	135 (450)	(495)	165 (540)	13 (45)	25-30 (90-110)	100 (320)
80 (50)		150 (500)	165 (550)	180 (600)	15 (50)	30-35 (100-125)	120 (400)
90 (55)		165 (550)	185 (605)	200 (660)	16 (55)	35-40 (110-140)	150 (500)
100 (60)		180 (600)	200 (660)	220 (720)	18 (60)	40-45 (120-150)	180 (600)
105 (65)		195 (650)	215 (715)	235 (780)	19 (65)	40-50 (130-165)	210 (700)
115 (70)		215 (700)	235 (770)	255 (840)	21 (70)	45-55 (140-175)	240 (800)

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GENERAL TRAFFIC CONTROL NOTES	
RECORD COPY SIGNED BY SAM ANGOORI — *01/04/10* — ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 13 OF 13



BIKE LANE CLOSURE

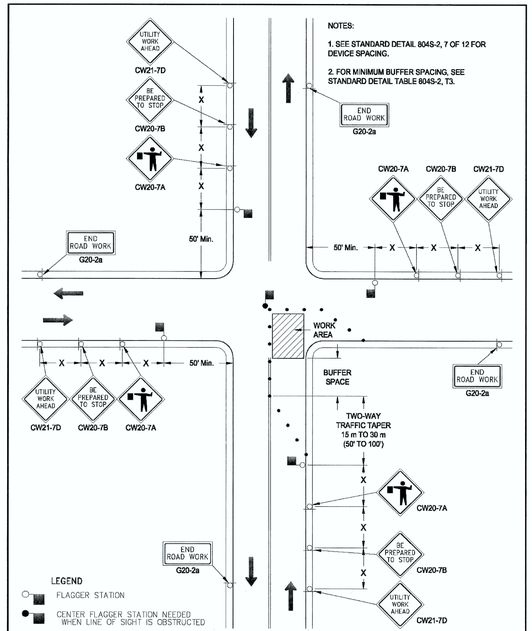
SCALE: N.T.S.



NOTES:

1. WIDTH OF RAIL SHALL BE A MINIMUM OF 200 mm (8") AND MAY BE UP TO A MAXIMUM OF 300 mm (12"), 25 mm (1") HOLLOW-PROFILE PLASTIC LUMBER WITH INTERNAL STIFFNERS.
2. RAILS SHALL BE FASTENED TO EACH TUBE WITH 50 mm (2") STEEL BOLTS WITH NUTS AND WASHERS ON EACH SIDE. BOLT THREADS SHALL BE PEENED.
3. THE RAILS SHALL HAVE 150 mm (6") WIDE REFLECTORIZED RED STRIPES OF TAPE PLACED ON 45 DEGREE SLOPES, DOWN AND TOWARD THE CENTER OF THE BARRICADE.
4. BARRICADES MAY BE CONSTRUCTED IN SECTIONS OR MAY BE CONTINUOUS ACROSS ROADWAY WIDTH. SPLICES ON CONTINUOUS RAIL BARRICADES SHALL BE AT POSTS AND SHALL HAVE A 600 mm (2') SPLICE BLOCK ON BACK SIDE OF THE SAME MATERIAL AS RAIL.
5. 450 mm (18") DIAMOND REFLECTORIZED RED PANEL OR 450 mm (18") DIAMOND RED OR BLACK PANEL WITH NINE-75 mm (3") DIAMETER RED REFLECTORS SYMMETRICALLY PLACED AT CENTER POSTS. A MINIMUM OF 1.2 m (4') ABOVE GROUND SHALL BE USED FOR END OF ROAD MARKERS AS PER TEXAS MANUAL on UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) SECTION 3C.04.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	STREET-END BARRICADE	
RECORD COPY SIGNED BY BILL GARDNER — *03/12/07* — ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 803S-1



	4 APPROACH INTERSECTION FLAGGING OPERATIONS	
RECORD COPY SIGNED BY - — - — ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

4 Way Intersection Flagging Operations

Standard:

1. **Flagger stations shall be located such that approaching road users will have sufficient distance to stop at the intended stopping point.**
2. **All flagger personnel shall follow standard detail 804S-2, 1 & 2 of 11 when conducting flagging operations.**
3. **All flaggers shall have good visual contact or two-way radio contact with each other.**
4. **Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space.**

Guidance:

5. Floodlights should be provided as needed to mark flagger stations at night.
6. Table 804S-2, T3:

MINIMUM FLAGGER STATION BUFFER

Speed (mph)	Distance (ft.)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335

Standard:

7. **An Austin Police Officer shall be present for flagging operations performed at a traffic signal controlled intersection.**

	4 APPROACH INTERSECTION FLAGGING OPERATIONS	
RECORD COPY SIGNED BY - — - — ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 38 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax. (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500

Copyright © 2015

NO.	DATE	REVISION	APPROVAL

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 38 OF 45

G:\106960\10026\CD DWG\10696R0026TCD07.dwg modified by jthompson on Oct 21, 15 10:31 AM

SP-2015-0337D

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any party's use or modification of this standard, and no responsibility is assumed by the Texas Department of Transportation for any losses resulting from its use.

Barricade and Construction (BC) Standard Sheets General Notes:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets", the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

Worker Safety Apparel Notes:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3134

WEB ADDRESSES FOR REFERENCED DOCUMENTS

Compliant Work Zone Traffic Control Devices List (CWZTCD)
http://www.txdot.gov/publications/traffic.htm

Texas Manual on Uniform Traffic Control Devices (TMUTCD)
http://www.txdot.gov/publications/traffic.htm

Standard Highway Sign Designs for Texas (SHSD)
http://www.txdot.gov/publications/traffic.htm

Traffic Engineering Standard Sheets
http://www.txdot.gov/business/specs.htm

Material Producer List
http://www.txdot.gov/business/producer-list.htm

Departmental Material Specifications (DMS)
http://www.txdot.gov/services/construction/material-specifications/

Roadway Design Manual
http://www.txdot.gov/services/general+services/manuals.htm

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

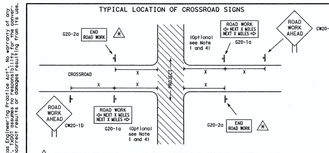
1 of 12 BC(1)-07

© TxDOT 11-1-02	Tex-1066E	Dev-1066E	Tex-1166E	Dev-1166E
4-03 REVISIONS	Conf	SLD?	ALT	HIGHWAY
9-07	YES?		Date/Ft	SHEET NO.

101

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any party's use or modification of this standard, and no responsibility is assumed by the Texas Department of Transportation for any losses resulting from its use.

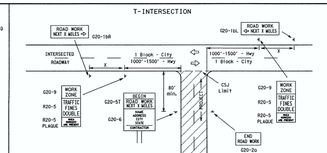
TYPICAL LOCATION OF CROSSROAD SIGNS



⚠ May be mounted on back of CW20-10 sign with approval of engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a CW20-10 ROAD WORK AHEAD sign and a G20-2a END ROAD WORK sign,unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-10) sign mounted back to back with the reduced size 36" x 18" END ROAD WORK (G20-2a) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The CW20-10 may also be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans, will be required by the Engineer/Inspector.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near the intersection.
2. If construction closes the road at a T-intersection the Contractor shall place the G20-4 "Contractor Name" sign behind the Type III Barricades for the road closure (see BC(10) also). The G20-10L and G20-10R signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING [1,2,3]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20 CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW3, CW6, CW9, CW11, CW14	36" x 36"	48" x 48"
CW5, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

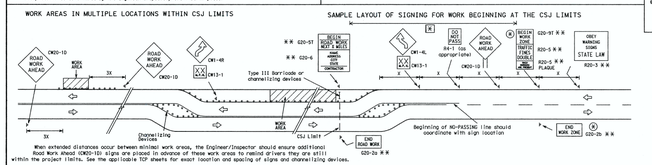
SPACING

Posted Speed	Sign A Spacing "X"
MPH	Feet (Approx.)
30	120
35	160
40	240
45	320
50	400
55	500 [4]
60	600 [4]
65	700 [4]
70	800 [4]
75	900 [4]
80	1000 [4]
*	*

* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.
A minimum distance three work area to first advance Warning sign nearest the work area and/or distance between each additional sign.

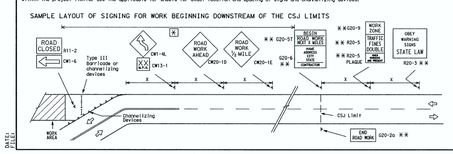
General Notes:
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 2y, 4y or more advance warning.
4. 24" x 24" ROAD WORK AHEAD (CW20-10) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Any diamond shaped warning sign sizes are indicated.
6. See sign size listing in "INDEX", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and G20-5T sign for each specific project. This distance shall be the "X" distance rounded to the next whole distance with the approval of the Engineer. No decimals shall be used.

(X) The G20-9T and G20-2b shall be used when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a work zone where traffic fines may double if workers are present.

K K Required CSJ Limit signing. See Note 10 on BC(1).

[X] Area for placement of "ROAD WORK AHEAD" sign and other signs or devices as called for on the Traffic Control Plan.

LEGEND

- Sign
- Channelizing Devices
- Type III Barricade
- See Typical Construction Warning Sign Size and Spacing chart for the TMUTCD for sign spacing requirements.

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PROJECT LIMIT STANDARD

2 of 12 BC(2)-07

© TxDOT 11-1-02	Tex-1066E	Dev-1066E	Tex-1166E	Dev-1166E
9-07 REVISIONS	Conf	SLD?	ALT	HIGHWAY
	YES?		Date/Ft	SHEET NO.

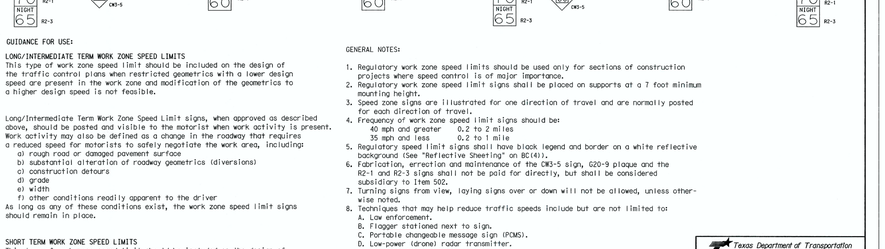
102

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any party's use or modification of this standard, and no responsibility is assumed by the Texas Department of Transportation for any losses resulting from its use.

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.
Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS
This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:
a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver
As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS
This type of work zone speed limit should be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 15 feet of pavement edge or actually on the pavement.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES:

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, errection and maintenance of the CW3-5 sign, G20-9 plaque and the R2-1 and R2-3 signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless otherwise noted.
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (Kprara) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT STANDARD

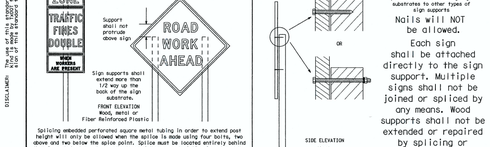
3 of 12 BC(3)-07

© TxDOT 11-1-02	Tex-1066E	Dev-1066E	Tex-1166E	Dev-1166E
9-07 REVISIONS	Conf	SLD?	ALT	HIGHWAY
	YES?		Date/Ft	SHEET NO.

103

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any party's use or modification of this standard, and no responsibility is assumed by the Texas Department of Transportation for any losses resulting from its use.

TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



K When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb.
Objects shall NOT be placed under skids as a means of leveling.

K K When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane.
Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails will NOT be allowed.

Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6L.03 Hand Signaling Devices in the MMUTCD.

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. If existing permanent signs are in conflict with work zone conditions, they shall be covered. The permanent signs until the permanent sign message matches the roadway conditions.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CMUTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Signs shall NOT be placed on signs.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
6. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the TCP sheets. Any signs required by the Engineer/Inspector, in addition to those shown on the TCP sheets, the Responsible Person, all changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
7. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall request from the Engineer a copy of the manufacturer's installation recommendations so the Engineer can determine if the installations are being followed.
8. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or warped reflective sheeting as directed by the Engineer/Inspector.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
10. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.
11. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - operations work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT
1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday, or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS
1. The Engineer may allow the use of smaller size construction warning signs on secondary roads or city streets where speeds are low if the sign size is listed as an option on the "Typical Construction Warning Sign Size and Spacing" chart shown on BC(2).
2. The Contractor shall furnish the sign sizes shown in plans, the BC Sheets, the TCP sheets or as directed by the Engineer.

SIGN SUBSTRATES
1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recomendations for the type of sign support that is being used. The CWTCD lists each substrate that can be used on the different types and models of sign supports.
2. Sheet/ type substrates are NOT an approved sign substrate, regardless of the tightness of the wood.
3. Rigid sign substrates shall be fastened to the sign support with a minimum of four bolts with washers on the back, fastened to the back of the sign and extending fully across the sign. The insert shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 4" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING
1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type C (High Specific Intensity), shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type E (Fluorescent Prismatic), shall be used for rigid signs with orange background.

SIGN LETTERS
1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING
1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. When signs are only temporarily removed from use, the temporary signs installed on square metal tubing may be turned away from traffic 90 degrees when long sign message is not applicable. This type of sign support meets the crashworthiness standards regardless of the direction of impact. This technique may not be used for signs installed in the medians of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used should be opaque, such as heavy mil black plastic, or other materials which will cover the sign tightly and resist wind, and which have adhesive properties under dumestic headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face. These materials can damage the retroreflectivity of sheeting.
7. Signs and anchor studs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS
1. Sign supports/substrates require the use of weights to keep from turning over.
2. The use of sandbags with dry, cohesionless sand is recommended.
3. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
4. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
5. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
6. Sandbags shall be made of a durable material that tears upon vehicular impact.
7. Rubber (such as tire inner tubes) shall NOT be used for sandbags.
8. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured for the purpose of holding signs should be used for this task.
9. Sandbags shall only be placed along or just inside the CSJ limits. Supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags should be placed along the length of the skids to weigh down the sign support.
10. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES STANDARD

4 of 12 BC(4)-07

© TxDOT 11-1-02	Tex-1066E	Dev-1066E	Tex-1166E	Dev-1166E
9-07 REVISIONS	Conf	SLD?	ALT	HIGHWAY
	YES?		Date/Ft	SHEET NO.

104

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 39 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

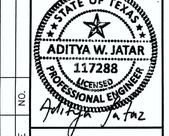
FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Phone (512) 328-0325 Fax (512) 328-0325
TBPE #F-1046 TBPLS #F-10107500

Copyright © 2015

5/6/2015



TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 39 OF 45

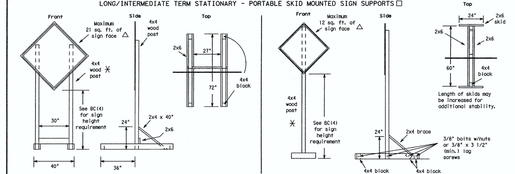
G:\010696\100026\CD DWG\010696026TC008.dwg modified by jthompson on Oct 21, 15 10:26 AM

SP-2015-0337D

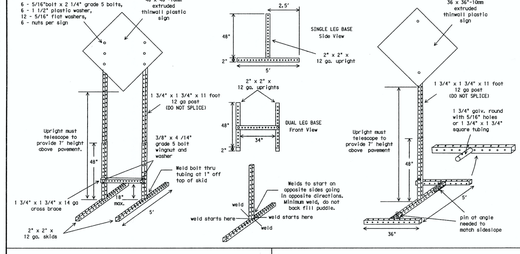
DISCLAIMER: The use of this electronic file is governed by the Texas DOT Standard Occupational Specification (SOS). No warranty of any kind is made by Texas DOT or any of its employees as to the accuracy of these files or any of the data contained therein. Use of this file is at the user's sole risk. This SOS file is provided on an "as is" basis and Texas DOT disclaims any and all express or implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose. In no event shall Texas DOT be liable for any damages, including but not limited to direct, indirect, special or consequential damages arising out of, resulting from, or any way connected with the use of this file, whether or not Texas DOT has been advised of the possibility of such damages. This file is not to be used for any purpose other than that specifically authorized by Texas DOT. A user of this file may not assert any claim against Texas DOT or its employees and will hold Texas DOT harmless from any claim arising from the use of this file. The user's sole and exclusive remedy is to discontinue the use of this file.

SKID MOUNTED WOOD SIGN SUPPORTS

LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □

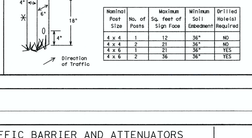


SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS



WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).



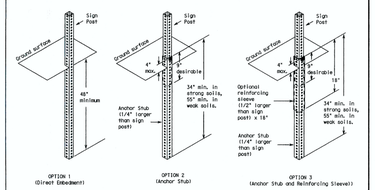
WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS

Nominal Post Size	No. of Posts	Maximum Sq. Feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	20	36"	NO
4 x 4	3	21	36"	YES
4 x 6	2	36	36"	YES

GROUND MOUNTED SIGN SUPPORTS

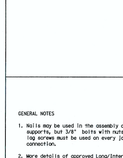
Refer to the CMTED and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.

PERFORATED SQUARE METAL TUBING



WING CHANNEL

Lag-spike/base bolted anchor



GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. Work details of approved Longitermsessions and Short Term supports can be found on the CMTED list. See BC(1) for website location.
3. No more than 2 sign posts shall be placed within a 10' BL(1)lists, except for specific materials noted on the CMTED List.
4. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

□ See BC(4) for definition of "Work Duration."

■ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

△ See the CMTED for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION
TYPICAL SIGN SUPPORT
STANDARD

5 of 12 BC(5)-07

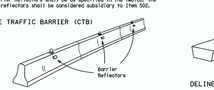
©TxDOT 11-14-02		Tot. THWY	Dist. THWY	Tot. THWY	Dist. THWY
9-07	REVISIONS	Sheet Total		JMR	HIGHWAY
		*HWY		Date/Ti	SHEET no.

105

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

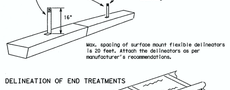
1. Barrier Reflectors shall be prequalified, and conform to the color and retroreflity requirements of DMS-8600. A list of prequalified Barrier Reflectors (Type C Delineator) can be found at the Material Producer List web address shown on BC(1).
2. Color of the Barrier Reflectors to be specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 502.

CONCRETE TRAFFIC BARRIER (CTB)

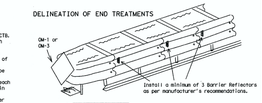


3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB, an alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier. See the following illustration.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the illustration.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented. Yellow Barrier Reflectors shall be made with Type E Fluorescent Prismatic Yellow Retroreflective Sheeting. White reflectors shall be made with Type D White Prismatic sheeting.
7. Barrier Reflectors shall be attached with 3/8" bolts.
8. Permanent barriers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above details.

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS



APPROACHING TRAFFIC BOTH SIDES	ONE SIDE	
DELINEATION	OM-1	OM-3 or Vertical Panel

END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report No. 350. Refer to the CMTED List for approved end treatments and manufacturers.

TYPICAL FLASHING ARROW PANEL

Arrow Panels may be located behind channelizing devices in place for a lane closure, on the shoulder, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Panel should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction operations on two-lane roadways.
2. Flashing Arrow Panels should not be used on two-lane, two-way roadways. Workers, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be in conjunction with the Flashing Arrow Panel.
4. The Flashing Arrow Panel should be able to display the following symbols:

Flashing RIGHT (LEFT) ARROW

Flashing DOUBLE ARROW

Flashing CAUTION

5. The "CAUTION" display consists of four corner lamps flashing simultaneously.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Panel shall be capable of minimum 50 percent dimming from rated lamp wattage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow, and approximately 25 percent for each sequential phase of the flashing arrows.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.

Sequential Chevron

REQUIREMENTS

TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION: Flashing Arrow Panels shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW PANEL FROM THE RIGHT-OF-WAY OR PLACE THE ARROW PANEL BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

11. The Flashing Arrow Panel shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Panel SHALL NOT BE USED to intensify shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Panel provided it meets visibility, flash rate and dimming requirements for Flashing and Steady-Burn Warning Lights.
14. Minimum mounting height for solar sign arrow panels should be 7 feet from roadway to bottom of panel.

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350).
2. Refer to the CMTED for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CMTED List for the Test Level (TL) to ensure that the TMA meets the age requirements and the crashworthiness requirements outlined in the Federal Highway Administration (FHWA) for TMAs.
4. Refer to the CMTED for a list of approved TMAs.
5. TMAs are required on freeways unless otherwise noted in the plans.
6. A TMA should be used anytime that it can be positioned approximately 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
7. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation
Traffic Operations Division

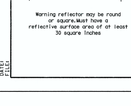
BARRICADE AND CONSTRUCTION
ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR STANDARD

7 of 12 BC(7)-07

©TxDOT 11-14-02		Tot. THWY	Dist. THWY	Tot. THWY	Dist. THWY
9-07	REVISIONS	Sheet Total		JMR	HIGHWAY
		*HWY		Date/Ti	SHEET no.

107

Type C Warning Light or approved substitute mounted adjacent to the travel way.



Warning reflector may be round or square. Must have a reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type E Sheeting (Fluorescent Prismatic) meeting the requirements of Departmental Material Specification DMS-8300.
4. Type C and Type D Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A rangbe flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelling devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type B Flashing Warning Lights shall not be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CMTCD.
3. The warning reflector shall have a minimum retroreflective surface area tone-sided of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square reflectors shall have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it is attached to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B (Non-fluorescent Prismatic).
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

DISCLAIMER: The use of this electronic file is governed by the Texas DOT Standard Occupational Specification (SOS). No warranty of any kind is made by Texas DOT or any of its employees as to the accuracy of these files or any of the data contained therein. Use of this file is at the user's sole risk. This SOS file is provided on an "as is" basis and Texas DOT disclaims any and all express or implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose. In no event shall Texas DOT be liable for any damages, including but not limited to direct, indirect, special or consequential damages arising out of, resulting from, or any way connected with the use of this file, whether or not Texas DOT has been advised of the possibility of such damages. This file is not to be used for any purpose other than that specifically authorized by Texas DOT. A user of this file may not assert any claim against Texas DOT or its employees and will hold Texas DOT harmless from any claim arising from the use of this file. The user's sole and exclusive remedy is to discontinue the use of this file.

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway. I.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. Limit the operation of PCMS to the hours that the work is to start on Saturday morning and ending on midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not display messages that scroll across the message sign, i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following is a list of abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated.
15. PCMS character height shall be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 720 feet. Truck mounted units must have a character height of 12 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctions. A pattern such as a series of horizontal solid bars is appropriate.

Word or Phrase	Abb.	Word or Phrase	Abb.
Access Road	ACCS RD	Major	MAJ
Air Quality	AIR QLTY	Miles	MI
Alternate	ALT	Miles Per Hour	MPH
Avenue	AVE	Minor	MNR
Best Route	BEST RTE	Monday	MON
Boulevard	BLVD	Normal	NORM
Bridge	BRDG	North	N
Cannot	CANT	Northbound	Cnjunct N
Center	CNTR	Parking	PKING
Construction	CONST		
Detour Ahead	CONST AHEAD	Parking Lot	PRK LOT
Detour Route	DETOUR RTE	Repair	REP
Do Not	DONT	Right Lane	RGT LN
East	E	Saturday	SAT
Eastbound	Cnjunct E	Service Road	SERV RD
Emergency	EMER	Speed	SPEED
Emergency Vehicle	EMER VEH	Slippery	SLIP
Express Lane	EXP LANE	South	S
Express Lanes	EXP LANE	Southbound	Cnjunct S
Expressway	EXPWY	Speed	SPD
XXX Feet	XXX FT	Street	ST
Fog Ahead	FOG AHD	Sunday	SUN
Freeway	FRWY, FWY	Telephone	PHONE
Freeway Blocked	FWY BLKD	Temporary	TEMP
Friday	FRI	Thursday	THURS
Hazardous Driving	HAZ DRIVING	To Avoid Accident	TO SMSH
Hazardous Material	HAZMAT	Traffic	TRAF
High-Occupancy Vehicle	HOV	Travelers	TRVLRS
Highway	HWY	Tuesday	TUES
Information	INFO	Time Minutes	TIME MIN
It Is	ITS	Upper Level	UPPR LVL
Junction	JCT	Vehicle	VEH
Left	LFT	Warning	WARN
Left Lane	LFT LN	Wednesday	WED
Lane Closed	LN CLSD	Weight Limit	WT LIMIT
Lower Level	LOWR LVL	West	W
Maintenance	MAINT	Westbound	Cnjunct W
		Wet Pavement	WET PVMT
		Will Not	WONT

Roadway designation = IH-number, US-number, SH-number, FM-number

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *
XXXXXXXX BLVD CLOSED			

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT	FORW X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH
DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH
USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH
TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT
WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION
EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY
REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE
USE OTHER ROUTES	WATCH FOR WORKERS		
STAY IN LANE *			

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

** Advance Notice List

TUE-FRI XX AM- X PM
APR XX- XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

Application Guidelines

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase for both should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel List", "Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the Travel Phase selected.
5. If two PCMS are used in sequence, they must be separated by at least two miles. The first PCMS will be labeled to the queues, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

Wording Alternatives

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replace as appropriate.
5. AT, AHEAD, PAST and NEXT can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the CW21-7a Flagger Symbol, are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow panel provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

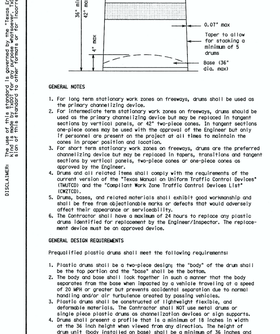
Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) STANDARD

6 of 12 BC(6)-07

©TxDOT 11-14-02		Tot. THWY	Dist. THWY	Tot. THWY	Dist. THWY
6-03	REVISIONS	Sheet Total		JMR	HIGHWAY
9-07		*HWY		Date/Ti	SHEET no.

106



GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by 42" two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and finish, and shall be free from cracks, sinks, or other defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved drum.

GENERAL DESIGN REQUIREMENTS

Prequalified plastic drums shall meet the following requirements:

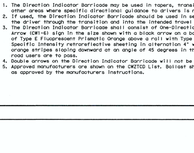
1. Plastic drums shall be a two-piece design, the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 10 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. The base shall be designed to be stable when using sand and deformable materials. The Contractor shall NOT use sandbags or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit body (not including the base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall be a minimum of 4 inches wide and shall provide 6IN high diameter hole to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a minimum unballasted weight of 7.7 lbs. and maximum unballasted weight of 11 lbs. The wall of the drum body shall be a minimum of 0.07 inch in thickness. Weight of any drum supplied which does not vary more than 0.5 lb. from that of the prequlified sample.
10. Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," unless otherwise specified in the plans. Specific Intensity Type C1 retroreflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain intact, adhere and maintain its delaminating, cracking, or loss of retroreflectivity other than that lose due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs minimum and 50 lbs maximum. The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed on an integral crumb rubber base or a solid rubber base.
3. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
4. The ballast shall not be susceptible to freezing. drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
5. Ballast shall not be placed on top of drums.
6. Adhesives may be used to secure base of drums to pavement.



DIRECTION INDICATOR BARRICADE

1. The Direction Indicator Barricade may be used in tapers, transitions, and tangent sections of temporary traffic control guidance to direct motorists.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large arrow (CW1-6) sign in the size shown with a black arrow on a background of Type C1 retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved adjustable rate arrow panels on the CMTCD List. Ballast shall be as approved by the manufacturers instructions.

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using Departmental Material Specifications.
2. Barricade and Warning Signs with an orange background shall be manufactured with Type E (Fluorescent Prismatic) sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Materials," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white Type C1 (Prismatic) retroreflective sheeting, or Type E High Specific Intensity), Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbols) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height.
5. Signs shall be installed using a 1/2 inch bolt (nominal) diameter, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they shall be placed on every drum, but not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 40 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

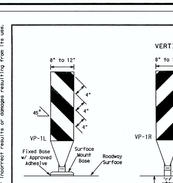
Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

*FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE

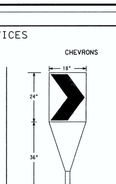
DISCLAIMER: The use of the TxDOT standards is governed by the "Texas Engineering Practice Act". No warranty is made by the TxDOT for any purpose whatsoever. The TxDOT assumes no responsibility and shall not be liable for any loss or damage resulting from the use of these standards.

CHANNELIZING DEVICES

VERTICAL PANELS (VPs)

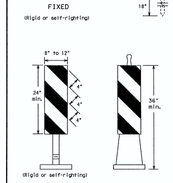


CHEVRONS



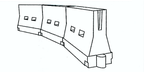
1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons may be used singly or in series on the outside of a sharp curve, or on the right side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has the next in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend, meeting for the chevron the retroreflective type C (fluorescent Prismatic) conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall be black vinyl nonreflective decal sheeting meeting the requirements of DMS-8300.
6. The VP-1L and VP-1R are used for lane transitions on freeways and divided highways. self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

PERSPECTIVE VIEW



1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. The VP-1L and VP-1R are for use on the left side. They may be used on the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high-speed facilities shall be mounted on 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable bases. See "Compliant Work Zone Traffic Control Devices List" (CWTCD).
6. Sheeting for the VP's shall be retroreflective Type C (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is greater than 36 inches, a panel strike of 6 inches shall be used.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS



LONGITUDINAL CHANNELIZING DEVICES

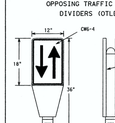
1. Longitudinal channelizing devices are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. Longitudinal channelizing devices may be used instead of a line of cones or drums.
3. Longitudinal channelizing devices may be used for delineation and installation requirements specific to the devices, and used only when shown on the CWTCD list.
4. Longitudinal channelizing devices should not be used to provide positive protection for obstacles, pedestrians or workers.
5. Longitudinal channelizing devices shall be retroreflective, or supplemented with retroreflective delineation as required for temporary barriers on BC(7)-07.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be used for temporary barrier purposes only for application and installation requirements specific to the devices, and used only when shown on the CWTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit should be not less than 32 inches in height.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The orange panels are retroreflective with an adhesive weight system to prevent displacement caused by a vehicle tipover or wind gust.
2. The OTLD may be used in combination with simple tubular markers or VP's.
3. Spacing between the OTLD shall not exceed 500 feet. Tubular markers or VP's placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be Type C (High Specific Intensity) retroreflective legend. Sheeting for the OTLD shall be retroreflective Type C (fluorescent Prismatic) conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall be black vinyl nonreflective decal sheeting meeting the requirements of DMS-8300.

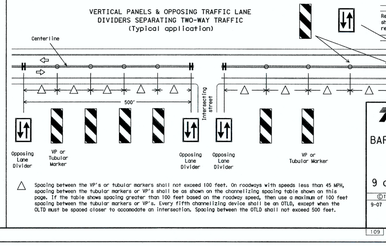
GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a 6" legend, flood or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle rerouted wind gusts making alignment of the channelizing devices off. The self-righting devices should not be used in place of fixed devices where in the plans, they have been called out in the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The bases shall be ballasted to approximately 35 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surface, including pavement surface discoloration or surface integrity. Driveable bases shall not be dragged into place or removed. The Engineer/Inspector shall approve all application and removal procedures of flexible bases.
8. Examples on this sheet are commonly used channelizing devices in work zones. For other devices, refer to the CWTCD.

Posted Speed	Formula	Minimum Desirable Taper Lengths ft (m)			Suggested Maximum Spacing of Channelizing Devices	
		10' (3)	11' (3.5)	12' (4)	20 ft Tapers	40 ft Tangent
30		150'	165'	180'	30'	60'-75'
35	$L=\frac{WS^2}{60}$	205'	225'	245'	35'	70'-90'
40		265'	295'	320'	40'	80'-100'
45		450'	495'	540'	45'	90'-110'
50		500'	550'	600'	50'	100'-125'
55	L=WS	550'	605'	660'	55'	110'-140'
60		600'	660'	720'	60'	120'-150'
65		650'	715'	780'	65'	130'-165'
70		700'	770'	840'	70'	140'-175'
75		750'	825'	900'	75'	150'-185'
80		800'	880'	960'	80'	160'-195'

W=Taper lengths have been rounded off.
L=Length of Taper (ft.) W=Width of Offset (ft.)
S=Posted Speed (MPH)

VERTICAL PANELS & OPPOSING TRAFFIC LANE DIVIDERS SEPARATING TWO-WAY TRAFFIC (Typical application)



Spacing between the VP's or tubular markers shall not exceed 100 feet. On roadways with speeds less than 45 MPH, spacing between the tubular markers or VP's shall be as shown on the channelizing devices taper table shown on this page. If the table shows spacing greater than 100 feet based on the roadway speed, then use a maximum of 100 feet spacing between the tubular markers or VP's. Every fifth channelizing device shall be an OTLD, except when the OLTD must be spaced closer to accomodate an intersection. Spacing between the OTLD shall not exceed 500 feet.

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

9 of 12 BC(9)-07

©TxDOT 11-1-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-07 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

1091

DISCLAIMER: The use of the TxDOT standards is governed by the "Texas Engineering Practice Act". No warranty is made by the TxDOT for any purpose whatsoever. The TxDOT assumes no responsibility and shall not be liable for any loss or damage resulting from the use of these standards.

WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the Traffic Operations standards.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet MISCTOWN.
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings as directed by the Engineer.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 596.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 150 feet when illuminated by automobile low-beam headlights at night, unless slight shortage is caused by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or disrupt a motorist toward or into the closed portion of the roadway, shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than two weeks, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Obliteration shall be by blackout to the fullest extent possible, so as not to leave a discernable marking. This shall be by a method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically called for in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for as "REMOVING PAVEMENT MARKINGS (6")", "REMOVING PAVEMENT MARKINGS AND MARKERS," unless otherwise detailed in the plans.
10. Blackout marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs

STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8302.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Apply five (5) tabs or 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between hub manufacturers.
4. See Standard Sheet #(TSP)hc for tab placement on new pavements. See Standard Sheet TCP(1-1) for tab placement on seal coat work.

Raised Pavement Markers used as Guidemarks

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - two amber reflective surfaces with yellow body).
WHITE - lone silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS

PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PREFABRICATED PAVEMENT MARKINGS-PERMANENT	DMS-8240
PREFABRICATED PAVEMENT MARKINGS-REMOVABLE	DMS-8241
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS	DMS-8302

A list of prequalified reflective raised pavement markers, non-reflective raised pavement markers, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(11).

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS STANDARD

11 of 12 BC(11)-07

©TxDOT February 1998	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
2-98 REVISIONS	CONT	SECT	JOB	HIGHWAY
7-02	DIST	COUNTY		SHEET NO.
11-02				
9-07				

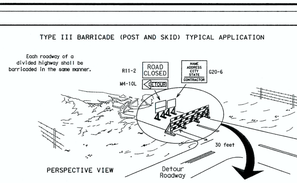
1093

DISCLAIMER: The use of the TxDOT standards is governed by the "Texas Engineering Practice Act". No warranty is made by the TxDOT for any purpose whatsoever. The TxDOT assumes no responsibility and shall not be liable for any loss or damage resulting from the use of these standards.

TYPE III BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWTCD) for Type III Barricades. Type III Barricades are a mixture of all materials used in the construction of Type III Barricades.
2. Type III Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward at 45° toward the shoulder which traffic must turn or detour. When traffic is to pass either to the right side or the left side, stripes should slope downward in both directions from the center of the barricade. Where no turns are provided or a closed road stripping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the right. For the left side of the roadway, striping should slope downward to the left.
5. Identification signs may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos on the Engineer/Inspector's discretion shall be ½".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Rails shall be retroreflective Type C (High Specific Intensity) conforming to Departmental Material Specification DMS-8300 unless otherwise noted.
9. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
10. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be dragged into place or removed. The Engineer/Inspector shall approve all application and removal procedures of flexible bases.
11. Examples on this sheet are commonly used channelizing devices in work zones. For other devices, refer to the CWTCD.

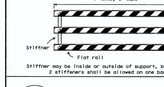
TYPE III BARRICADE (POST AND SKID) TYPICAL APPLICATION



Barricades shall NOT be used as a sign support.

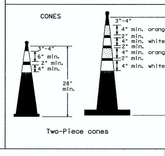
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



Stiffner may be installed on outside of supports, but no more than 2 stiffeners shall be allowed on one barricade.

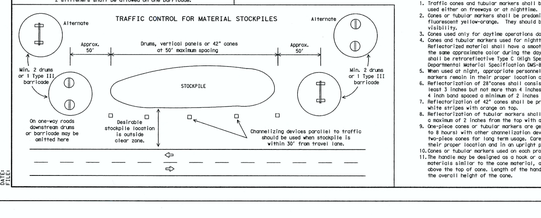
CONES



28" Cones shall have a minimum weight of 9 1/2 lbs.

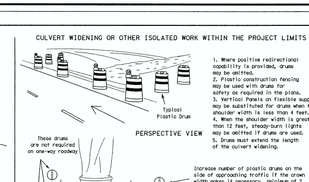
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

TRAFFIC CONTROL FOR MATERIAL STOCKPILES

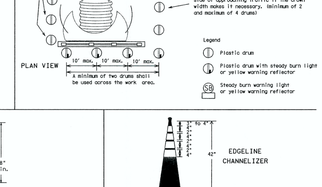


1. Traffic cones and tubular markers shall be a minimum of 28 inches in height when used either on freeways or at nighttime.
2. Cones or tubular markers shall be predominantly orange, fluorescent red-orange, or fluorescent yellow-orange. They should be kept clean and bright for maximum visibility.
3. Retroreflectivity for daytime operations do not require the retroreflected bands.
4. Cones and tubular markers used for nighttime operations shall be retroreflected. Reflectorized material shall have a smooth, sealed outer surface that displays the same distinctive color during the day and night. The reflectorized bands shall be retroreflective Type C (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
5. When used at night, appropriate personnel shall ensure that cones and tubular markers used in their proper position and in an upright position.
6. Retroreflection of 28"cones shall consist of a minimum 6 inch band placed at a point 4 inches from the top with a minimum of 4 inches between bands. Separated by a minimum 4 inch band spaced a minimum of 2 inches below the 6 inch band.
7. Retroreflection of 42" cones shall be provided by alternating 4 to 6" orange and white stripes with orange on top.
8. Retroreflectorization of tubular markers shall be a minimum of two 3 inch bands placed a maximum of 2 inches from the top with a maximum of 4 inches between bands.
9. One-piece cones or tubular markers are generally suitable for temporary usage up to 7 days on most roadways operating at 45 MPH or less. Cones on vertical panels, drums or other devices used for longer periods of time should be taken to ensure they remain in their proper location and in an upright position.
10. Cones or tubular markers used on each project shall be of the same size and shape.
11. The handle may be designed as a hook or other shape, fabricated from non-rigid materials similar to the cone material, and may extend up to a maximum of 8 inches above the top of cone. Length of the handle shall not be considered with regard to the overall height of the cone.

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



1. Where positive redirectional control is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 10 feet, steady-burn lights may be omitted if drums are used.
5. Drums may extend the length of the culvert widening.



5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED PROFESSIONAL ENGINEER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic opposing flow or to divide lanes of traffic.
3. This device is based on a 42 inch, two-piece cone with an alternate striping patterns four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The retroreflected bands shall be retroreflective Type C (reapplied bead High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

10 of 12 BC(10)-07

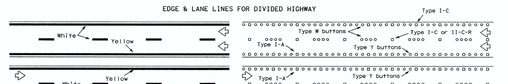
©TxDOT 11-1-02	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-07 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

1094

DISCLAIMER: The use of the TxDOT standards is governed by the "Texas Engineering Practice Act". No warranty is made by the TxDOT for any purpose whatsoever. The TxDOT assumes no responsibility and shall not be liable for any loss or damage resulting from the use of these standards.

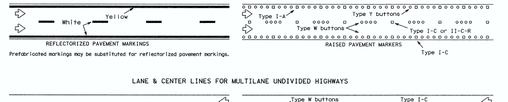
PAVEMENT MARKING PATTERNS

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



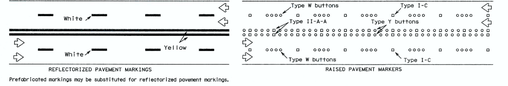
Pattern A is the TxDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



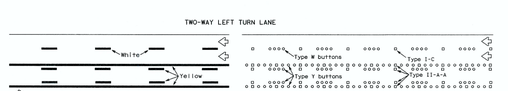
Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



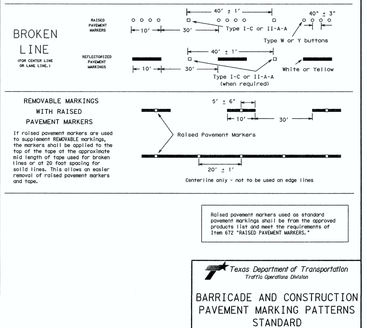
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE



Prefabricated markings may be substituted for reflectorized pavement markings.

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS STANDARD

12 of 12 BC(12)-07

©TxDOT February 1998	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
2-98 REVISIONS	CONT	SECT	JOB	HIGHWAY
7-02	DIST	COUNTY		SHEET NO.
11-02				
9-07				

1095

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 41 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC)_____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A)_____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2015

TRAFFIC CONTROL DETAILS

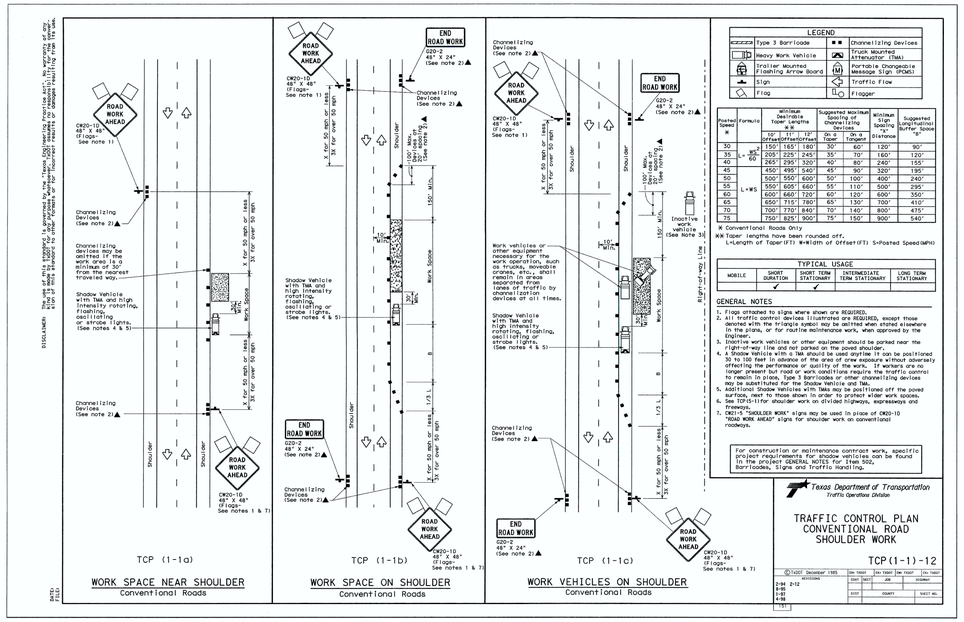
INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 41 OF 45

G:\106960\10026\CD DWG\10696026TCD10.dwg modified by jthompson on Oct 21, 15 10:26 AM

SP-2015-0337D



TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads

TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads

TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND

Type 3 Barricade		■■	Channelizing Devices
Heavy Work Vehicle			Truck Mounted Attenuator (TMA)
Trailer Mounted Flashing Arrow Board		M	Portable Changeable Message Sign (PCMS)
Sign			Traffic Flow
Flag			Flagger

Posted Speed MPH	Formula	Minimum Desirable Taper Lengths ft X			Suggested Maximum Spacing of Channelizing Devices ft		Minimum Sight Spacing "sx" Distance ft	Suggested Longitudinal Buffer Space "Bl" ft
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L= WS²/60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50	L=WS	500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the hi'angle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. Type 3 barricades installed on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-10 "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

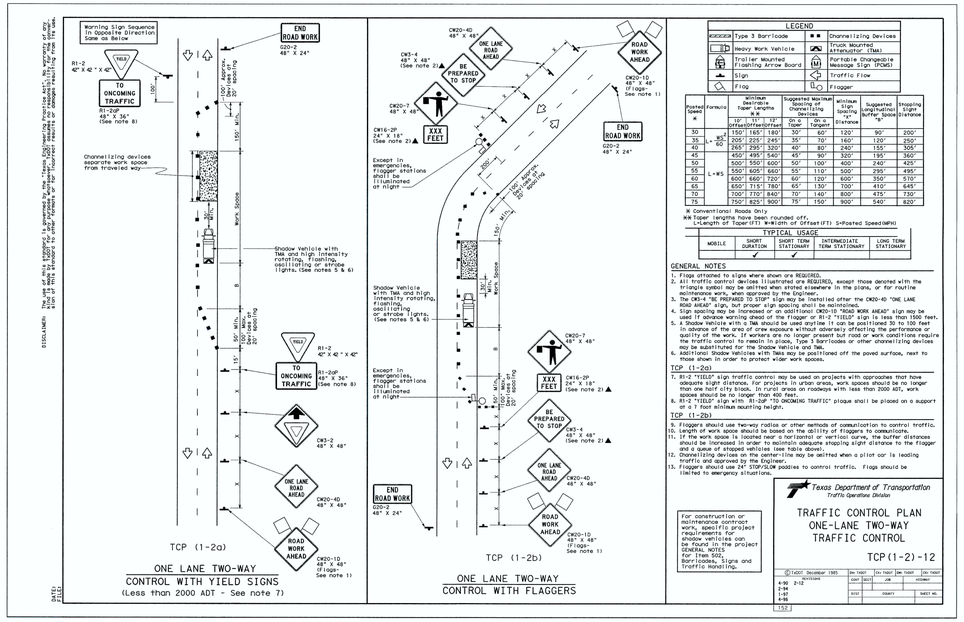
Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-12

©TxDOT December 1985	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
2-94 2-12	DIST	COUNTY		SHEET NO.
8-95				
3-97				
4-98				

151



TCP (1-2a)

ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)

TCP (1-2b)

ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND

Type 3 Barricade		■■	Channelizing Devices
Heavy Work Vehicle			Truck Mounted Attenuator (TMA)
Trailer Mounted Flashing Arrow Board		M	Portable Changeable Message Sign (PCMS)
Sign			Traffic Flow
Flag			Flagger

Posted Speed MPH	Formula	Minimum Desirable Taper Lengths ft X			Suggested Maximum Spacing of Channelizing Devices ft		Minimum Sight Spacing "sx" Distance ft	Suggested Longitudinal Buffer Space "Bl" ft	Stopping Sight Distance ft
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L= WS²/60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50	L=WS	500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be placed at midpoint when visibility of the work zone is less than 1500 feet or on hills or around curves.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 600 feet.
8. The R1-2aP "YIELD" sign with R1-2bP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased to provide adequate visibility for stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

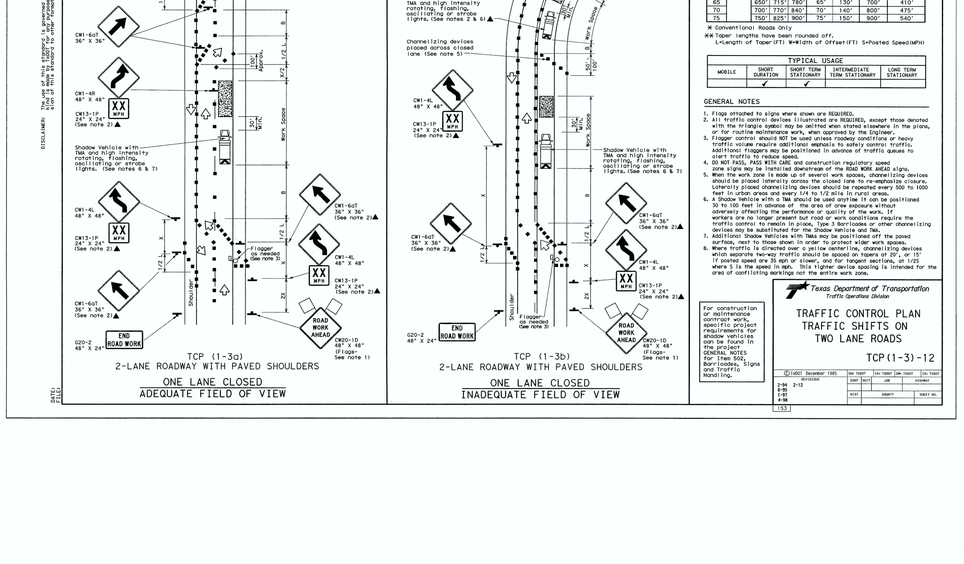
Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(1-2)-12

©TxDOT December 1985	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
4-90 2-12	DIST	COUNTY		SHEET NO.
2-94				
1-97				
4-98				

152



TCP (1-3a)

2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
ADEQUATE FIELD OF VIEW

TCP (1-3b)

2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

LEGEND

Type 3 Barricade		■■	Channelizing Devices
Heavy Work Vehicle			Truck Mounted Attenuator (TMA)
Trailer Mounted Flashing Arrow Board		M	Portable Changeable Message Sign (PCMS)
Sign			Traffic Flow
Flag			Flagger

Posted Speed MPH	Formula	Minimum Desirable Taper Lengths ft X			Suggested Maximum Spacing of Channelizing Devices ft		Minimum Sight Spacing "sx" Distance ft	Suggested Longitudinal Buffer Space "Bl" ft
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L= WS²/60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50	L=WS	500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the hi'angle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Flagger control should NOT be used unless roadway conditions or heavy traffic volumes require the special emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
4. DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
5. When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
8. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

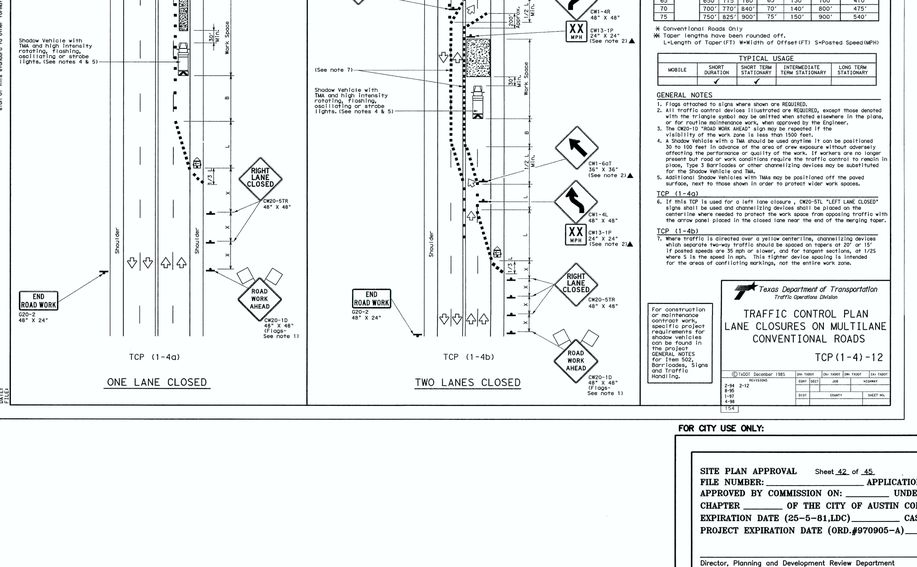
Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
TRAFFIC SHIFTS ON
TWO LANE ROADS

TCP(1-3)-12

©TxDOT December 1985	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
2-94 2-12	DIST	COUNTY		SHEET NO.
8-95				
3-97				
4-98				

153



TCP (1-4a)

ONE LANE CLOSED

TCP (1-4b)

TWO LANES CLOSED

LEGEND

Type 3 Barricade		■■	Channelizing Devices
Heavy Work Vehicle			Truck Mounted Attenuator (TMA)
Trailer Mounted Flashing Arrow Board		M	Portable Changeable Message Sign (PCMS)
Sign			Traffic Flow
Flag			Flagger

Posted Speed MPH	Formula	Minimum Desirable Taper Lengths ft X			Suggested Maximum Spacing of Channelizing Devices ft		Minimum Sight Spacing "sx" Distance ft	Suggested Longitudinal Buffer Space "Bl" ft
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L= WS²/60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50	L=WS	500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the hi'angle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

6. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opening traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE
CONVENTIONAL ROADS

TCP(1-4)-12

©TxDOT December 1985	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
2-94 2-12	DIST	COUNTY		SHEET NO.
8-95				
3-97				
4-98				

154

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 42 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

DISCLAIMER: The use and distribution of this electronic file is governed by and subject to the terms and conditions of the agreement between the City of Austin and the person from whom this electronic file was obtained. Any unauthorized use, distribution or change to this electronic file is strictly prohibited. The City of Austin shall not be liable for any damages resulting from the unauthorized use, distribution or change to this electronic file.

DATE/ISSUE

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500

Copyright © 2015

5/8/2015
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

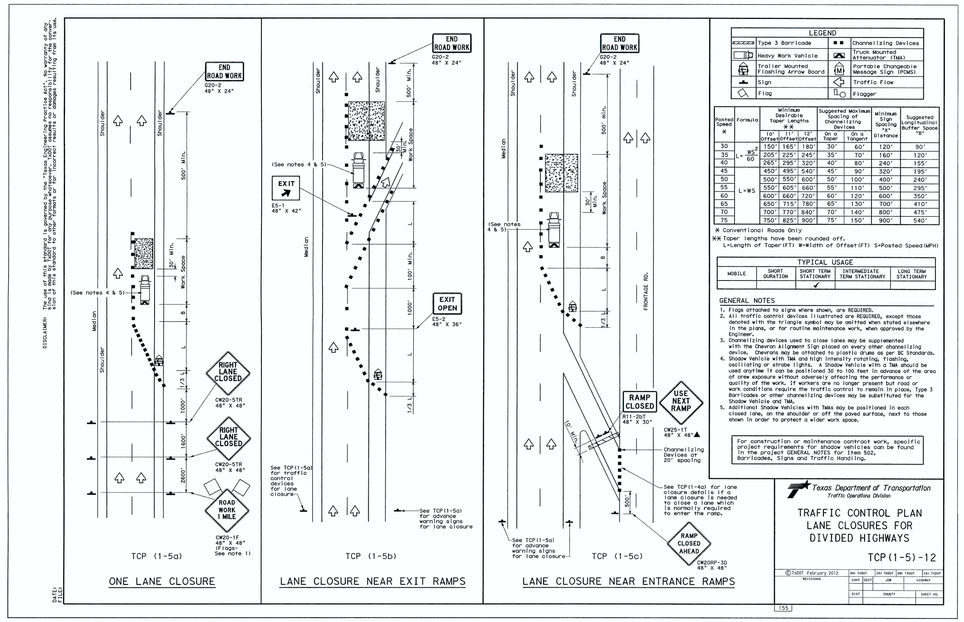
CLUB DEAL 116 & CLUB DEAL 120

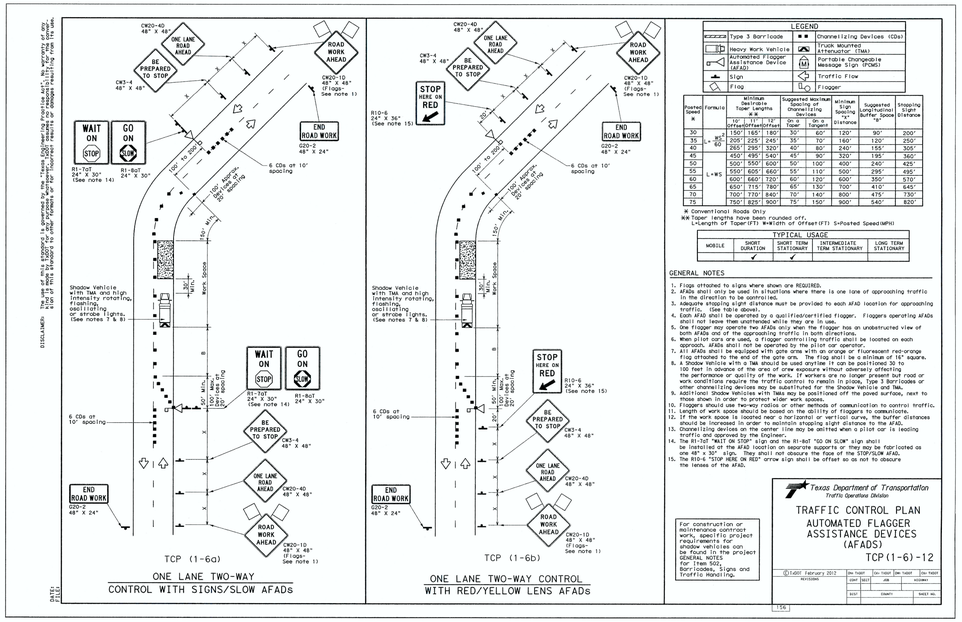
DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

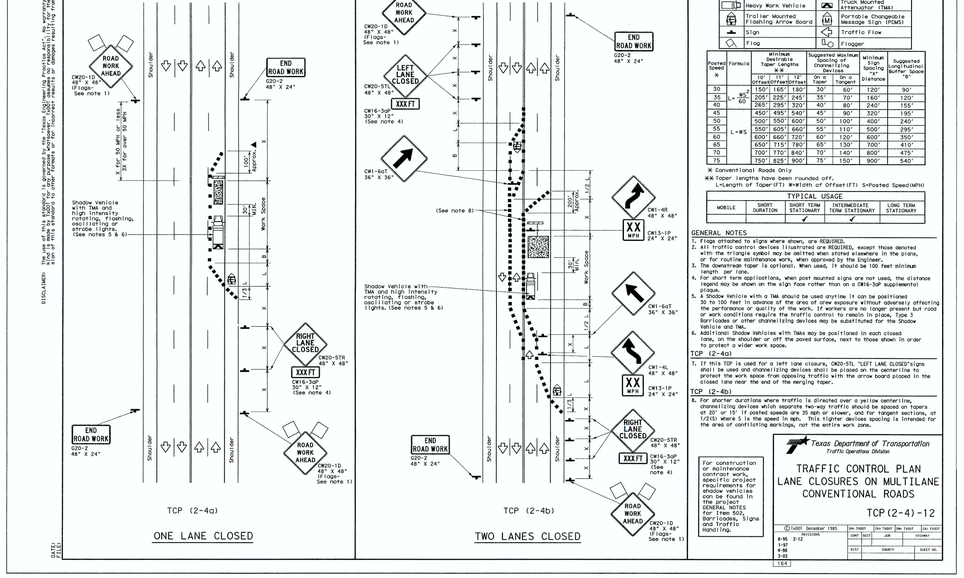
SHEET 42 OF 45

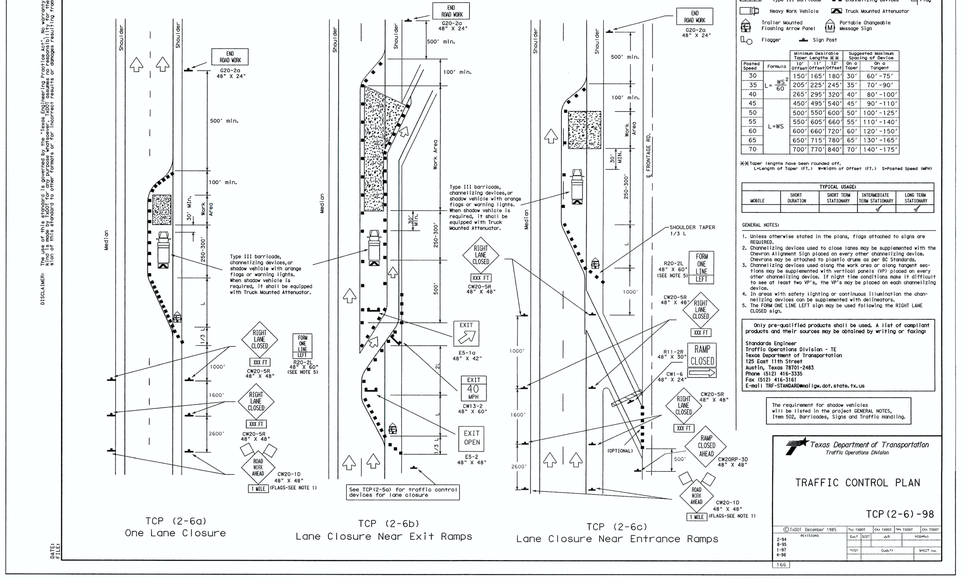
G:\010696\10026\CD DWG\10696010026TCD11.dwg modified by jthompson on Oct 21, 15 10:26 AM

SP-2015-0337D









FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 43 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81.LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

APPROVAL
REVISION
NO.
DATE

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2015

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

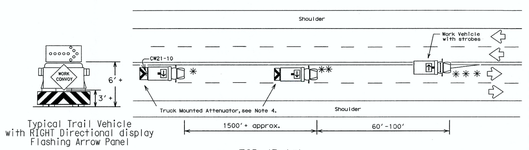
DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 43 OF 45

G:\106960\10026\CD DWG\106960026TC12.dwg modified by jthompson on Oct 21, 15 10:26 AM

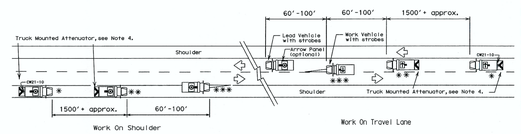
SP-2015-0337D

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 errors or omissions in this drawing. The use of this standard is limited to the application for which it was prepared by TxDOT. Any modifications to this standard, including the deletion of any portion thereof, are the responsibility of the user.

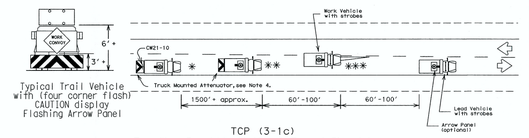


Typical Trail Vehicle
with RIGHT Directional display
Flashing Arrow Panel

TCP (3-1a)
Undivided Multilane Roadway



TCP (3-1b)
Two-Way Roadway With Paved Shoulders



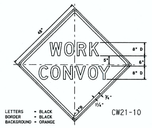
Typical Trail Vehicle
with (four corner flash)
CAUTION display
Flashing Arrow Panel

TCP (3-1c)
Two-Way Roadway Without Paved Shoulders

Legend:

- ★ TRAIL VEHICLE
- ★★ SHADOW VEHICLE
- ★★★ WORK VEHICLE
- Truck mounted attenuator
- HEAVY WORK VEHICLE

Arrow Panel Displays
- RIGHT Directional
- LEFT Directional
- RIGHT or LEFT Directional
- CAUTION mode



LETTERS = BLACK
BORDER = BLACK
BACKGROUND = ORANGE

GENERAL NOTES:

1. TRAIL, SHADOW, LEAD, and work vehicles shall be equipped with arrow panels as illustrated. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and slight distance restrictions.
2. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
3. The use of yellow rotating beacons or strobe lights on vehicles are required unless otherwise stated elsewhere in the plans.
4. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and the TRAIL VEHICLE are required.
5. Optional striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION D-9-8300, TYPE C.
6. Flashing Arrow Panels shall be Type B or Type C as per BC Standards. The panel operation shall be controlled from inside the vehicle.
7. Each vehicle shall have two-way radio communication capability.
8. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
9. Vehicle spacing between TRAIL VEHICLE and SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARDS@mail.ge.dot.state.tx.us

Shadow and trail vehicle shall be equipped with Truck Mounted Attenuator.

OPTIONAL STRIPING FOR TMA

STRIPING FOR TMA WILL BE REQUIRED ON ALL PROJECTS AWARDED AFTER JANUARY 1, 2000

Texas Department of Transportation
Traffic Operations Division

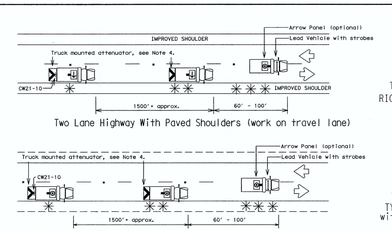
TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
UNDIVIDED HIGHWAYS
TCP(3-1)-98

©TxDOT December 1995		Tex-1106T	Dim-1908P	Tex-1962T	Dim-1962T
REVISIONS		CHKD	DSGN'D	DRAWN	QUANTITY
2-94					
8-95					
1-97		*1/97	DIANA'S		SHEET No.
4-98					

175

DATE:
FILE:

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 errors or omissions in this drawing. The use of this standard is limited to the application for which it was prepared by TxDOT. Any modifications to this standard, including the deletion of any portion thereof, are the responsibility of the user.

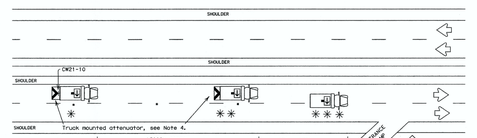


Two Lane Highway With Paved Shoulders (work on travel lane)

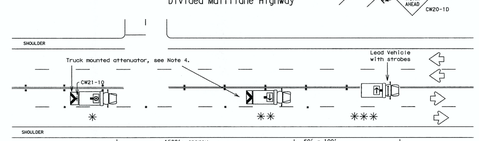
TYPICAL TRAIL VEHICLE
RIGHT Directional display
Flashing Arrow Panel

Two Lane Highway Without Paved Shoulders (work on travel lane)

TYPICAL TRAIL VEHICLE
with (four corner flash)
CAUTION display
Flashing Arrow Panel



Divided Multilane Highway



Undivided Multilane Highway

Legend:

- ★ TRAIL VEHICLE
- ★★ SHADOW VEHICLE
- ★★★ WORK VEHICLE
- Truck mounted attenuator
- HEAVY WORK VEHICLE

Arrow Panel Displays
- RIGHT Directional
- LEFT Directional
- RIGHT or LEFT Directional
- CAUTION mode

LETTERS = BLACK
BORDER = BLACK
BACKGROUND = ORANGE

GENERAL NOTES:

1. TRAIL, SHADOW, LEAD, and work vehicles shall be equipped with arrow panels as illustrated. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and slight distance restrictions.
2. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
3. The use of yellow rotating beacons or strobe lights on vehicles are required unless otherwise stated elsewhere in the plans.
4. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and the TRAIL VEHICLE are required.
5. Optional striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION D-9-8300, TYPE C.
6. Flashing Arrow Panels shall be Type B or Type C as per BC Standards. The panel operation shall be controlled from inside the vehicle.
7. Each vehicle shall have two-way radio communication capability.
8. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
9. Vehicle spacing between TRAIL VEHICLE and SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE.

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARDS@mail.ge.dot.state.tx.us

Shadow and trail vehicle shall be equipped with Truck Mounted Attenuator.

OPTIONAL STRIPING FOR TMA

STRIPING FOR TMA WILL BE REQUIRED ON ALL PROJECTS AWARDED AFTER JANUARY 1, 2000

Texas Department of Transportation
Traffic Operations Division

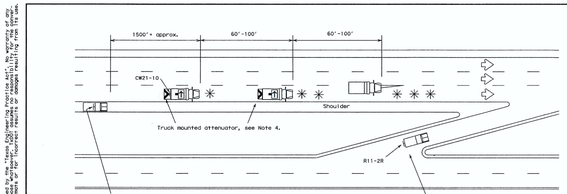
TRAFFIC CONTROL PLAN
MARKER INSTALLATION
RAISED PAVEMENT
TCP(3-3)-98

©TxDOT September 1987		Tex-1106T	Dim-1908P	Tex-1962T	Dim-1962T
REVISIONS		CHKD	DSGN'D	DRAWN	QUANTITY
2-94					
8-95					
1-97		*1/97	DIANA'S		SHEET No.
4-98					

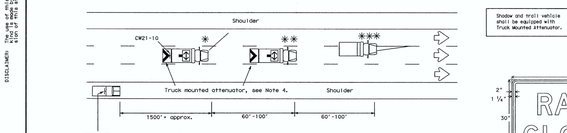
177

DATE:
FILE:

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 errors or omissions in this drawing. The use of this standard is limited to the application for which it was prepared by TxDOT. Any modifications to this standard, including the deletion of any portion thereof, are the responsibility of the user.

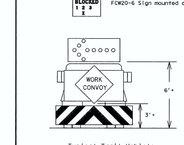


FCW20-6 Sign mounted on a truck or trailer

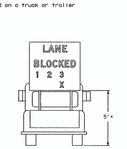


FCW20-6 Sign mounted on a truck or trailer

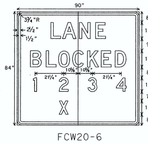
Shadow and trail vehicle shall be equipped with Truck mounted attenuator.



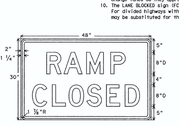
Typical Trail Vehicle
with LEFT Directional display
Flashing Arrow Panel



Typical Advance
Warning Vehicle



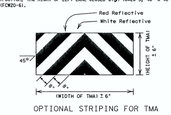
FCW20-6
LETTERS = BLACK
BORDER = BLACK
BACKGROUND = ORANGE



R11-2R
LETTERS = BLACK
BORDER = BLACK
BACKGROUND = WHITE

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing or faxing:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3335
Fax (512) 416-3161
E-mail TRF-STANDARDS@mail.ge.dot.state.tx.us



OPTIONAL STRIPING FOR TMA

STRIPING FOR TMA WILL BE REQUIRED ON ALL PROJECTS AWARDED AFTER JANUARY 1, 2000

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
DIVIDED HIGHWAYS
TCP(3-2)-98

©TxDOT December 1985		Tex-1106T	Dim-1908P	Tex-1962T	Dim-1962T
REVISIONS		CHKD	DSGN'D	DRAWN	QUANTITY
2-94					
8-95					
1-97		*1/97	DIANA'S		SHEET No.
4-98					

176

DATE:
FILE:

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-2011 Fax (512) 328-0325
TBPE # F-1046 TBPLS # F-10107500
Copyright © 2015

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c
CLUB DEAL 116 & CLUB DEAL 120

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 44 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ___ DDZ ___

Director, Planning and Development Review Department

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R010696010026

SHEET 44 OF 45

G:\106960\10026\CD DWG\10696010026TC013.dwg modified by jthompson on Oct 21, 15 10:26 AM

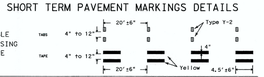
SP-2015-0337D

THESE PLANS ARE PROTECTED BY COPYRIGHT LAWS. ANY REPRODUCTION OF ANY PORTION OF THESE PLANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF JAMES BURY, LLC IS STRICTLY PROHIBITED. ANY VIOLATION WILL BE SUBJECT TO LEGAL ACTION.

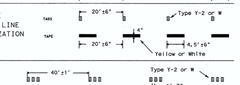
WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS

SOLID LINES

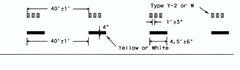
DOUBLE NO-PASSING LINE



SINGLE NO-PASSING LINE OR CHANNELIZATION LINE



BROKEN LINE (FOR CENTER LINE OR LANE LINE.)



NOTES:

1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible-reflective roadway marker tabs unless otherwise specified elsewhere in plans.
2. Short term pavement markings shall NOT be used to simulate edge lines.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.
4. Temporary flexible-reflective roadway marker tabs will require normal maintenance replacement when used on roadways with ADT greater than 2000 vpd, or when used on roadways with 45 mph or greater posted speed limits. When roadways exceed these values, additional maintenance replacement of devices should be planned.
5. No segment of roadway open to traffic shall remain without permanent pavement markings for a period greater than 14 calendar days. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
6. For two lane, two-way roadways, DO NOT PASS signs shall be erected to mark the beginning of sections where passing is prohibited and PASS WITH CARE signs shall be erected to mark the beginning of sections where passing is permitted. Signs shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and may be used to indicate the limits of no-passing zones for up to 14 calendar days. Permanent pavement markings should then be placed.
7. For low volume two lane, two-way roadways of 4000 ADT or less, no-passing lines may be omitted when approved by the Engineer. DO NOT PASS and PASS WITH CARE signs shall be erected less note 6).

TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS (TABS)

1. Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body), Type Y (one amber reflective surface with yellow body) and Type W (one white or silver reflective surface with white body). Additional details may be found on DCI101.
2. Tabs shall be placed immediately following placement of the pavement.
3. When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low-beam head light at night, unless sight distance is restricted by roadway geometrics.
4. No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 3.

REMOVABLE - PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241. A list of prequalified products can be found at the following web sites:
ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/povemark.pdf

NON REMOVABLE - PREFABRICATED PAVEMENT MARKINGS

1. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240 or the TXDOT Purchase Specification No. 550-74-89. A list of prequalified products and a copy of the TXDOT Purchase Specifications can be found at web sites:
ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/povement.pdf
ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/tssr1ss377.pdf

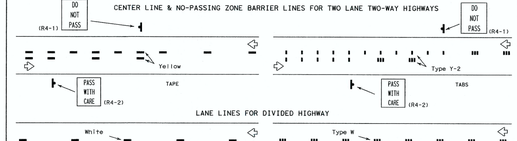
RAISED PAVEMENT MARKERS

1. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200.
2. A list of prequalified reflective raised pavement markers can be found at the following web sites:
ftp://ftp.dot.state.tx.us/pub/txdot-info/gsd/pdf/desk030rrsp.pdf

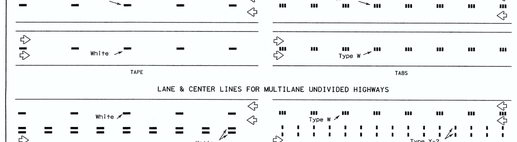
DATE: FILE:

WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS

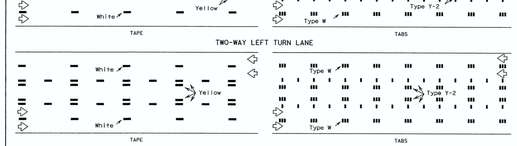
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



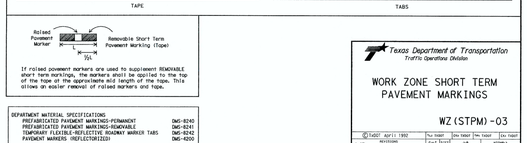
LANE LINES FOR DIVIDED HIGHWAY



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



TWO-WAY LEFT TURN LANE



If raised pavement markers are used to supplement REMOVABLE short term markings, the markers shall be applied to the top of the tape at the approximate mid length of the tape. This allows an easier removal of raised markers and tape.

DEPARTMENT MATERIAL SPECIFICATIONS	
PREFABRICATED PAVEMENT MARKINGS-PERMANENT	DMS-8240
PREFABRICATED PAVEMENT MARKINGS-REMOVABLE	DMS-8241
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS	DMS-8242
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200

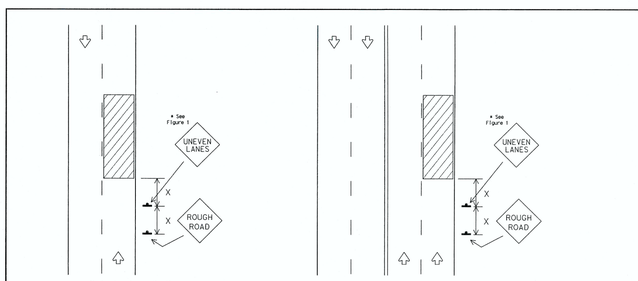
Texas Department of Transportation
Traffic Operations Division

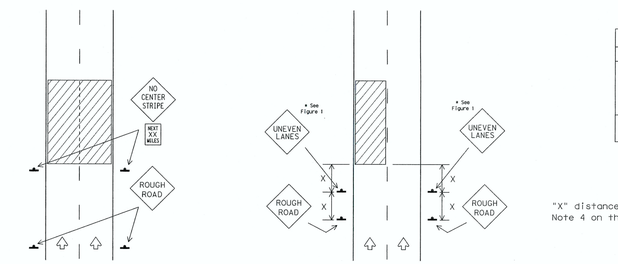
WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-03

© TxDOT April 1992	Tx DOT	Div TxDOT	Rm TxDOT	Div TxDOT
REVISIONS	CHK	DSGN	CHK	HIGHWAY
1-97				
3-03				
	"CSJ"	Date/Tr		SHEET No.

112





"X" distance - See Note 4 on this page.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN SUBSTRATE	DMS-7130
PREFABRICATED PAVEMENT MARKINGS-PERMANENT	DMS-8240
PREFABRICATED PAVEMENT MARKINGS-REMOVABLE	DMS-8241
FLAT SURFACE REFLECTIVE SHEETING	DMS-8300
VINYL NON-REFLECTIVE DECAL SHEETING	DMS-8320

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE E (FLUORESCENT PRISMATIC)
BLACK	LEGEND & BORDERS	VINYL NON-REFLECTIVE DECAL SHEETING

GENERAL NOTES:

1. If spalling or holes occur, ROUGH ROAD signs should be placed in advance of the condition and may be repeated throughout the project.
2. UNEVEN LANES sign (CWR-11) should be installed in advance of the condition that causes the warning. Signs installed along the uneven lane condition may be supplemented by a NEXT XX MILES sign (CWR1-16) or Advisory Speed sign (CWR1-1).
3. NO CENTER STRIPE signs (CWR-12) should be installed if centerlines or lane lines are obscured or obliterated. The signs should remain in place until permanent pavement markings are installed.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. When operations are completed and final surface treatment will not be placed for a period of time, all signs shall be removed from the right of way and become the property of the State. These signs shall be installed on approved permanent sign supports as per TxDOT standards. Additional signs may be required as directed by the Engineer. Minimum mounting height of signs is 7 feet. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to the item "BARRICADES, SIGNS AND TRAFFIC HANDLING."
6. Pavement markings shall be replaced as operations proceed.
7. Short term markings shall not be used to simulate edge lines.
8. When the Engineer determines that signing not in the details found in the "Standard Highway Sign Designs for Texas," latest edition, Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.

FIGURE 1

Edge Condition	Edge Height (D)	Warning Devices
D	less than or equal to 1"	Signs: CWR-8
	greater than 1" to 2½" (max(max-planing) 1½" (typical-overlay)	Signs: CWR-11, CWR-8

Distance "D" may be a maximum of 4½" for planing operations and 2" for overlay operations if uneven lanes are open to traffic after work operations cease.

Texas Department of Transportation
Traffic Operations Division

SIGNING FOR UNEVEN LANES

WZ(UL)-03

© TxDOT April 1992	Tx DOT	Div TxDOT	Rm TxDOT	Div TxDOT
REVISIONS	CHK	DSGN	CHK	HIGHWAY
8-95				
1-97				
2-98				
3-03	"CSJ"	Date/Tr		SHEET No.

114

FOR CITY USE ONLY:

SITE PLAN APPROVAL Sheet 45 of 45
FILE NUMBER: _____ APPLICATION DATE: _____
APPROVED BY COMMISSION ON: _____ UNDER SECTION _____ OF CHAPTER _____ OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81,LDC) _____ CASE MANAGER _____
PROJECT EXPIRATION DATE (ORD.#970905-A) _____ DWPZ ____ DDZ ____

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING: _____
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____

FINAL PLAT MUST BE RECORDED BY THE PROJECT EXPIRATION DATE, IF APPLICABLE. SUBSEQUENT SITE PLANS WHICH DO NOT COMPLY WITH THE CODE CURRENT AT THE TIME OF FILING, AND ALL REQUIRED BUILDING PERMITS AND/OR A NOTICE OF CONSTRUCTION (IF A BUILDING PERMIT IS NOT REQUIRED), MUST ALSO BE APPROVED PRIOR TO THE PROJECT EXPIRATION DATE.

NO.	DATE	REVISION	APPROVAL

BURY
221 West Sixth Street, Suite 600
Austin, Texas 78701
Tel. (512) 328-0011 Fax (512) 328-0325
TBPE # F-1048 TBPLS # F-10107500
Copyright © 2015

5/6/2016
STATE OF TEXAS
ADITYA W. JATAR
117288
LICENSED
PROFESSIONAL ENGINEER

TRAFFIC CONTROL DETAILS

INDIAN HILLS 48-INCH WATER LINE NO. 1 PH. 1b & 1c

CLUB DEAL 116 & CLUB DEAL 120

DRAWN BY: JT
DESIGNED BY: AJ
REVIEWED BY: SB
PROJECT NO.: R0106960100026

SHEET 45 OF 45

G:\106960\10026\CD DWG\106960026TC014.dwg modified by ajatar on Oct 21, 15 10:28 AM

SP-2015-0337D