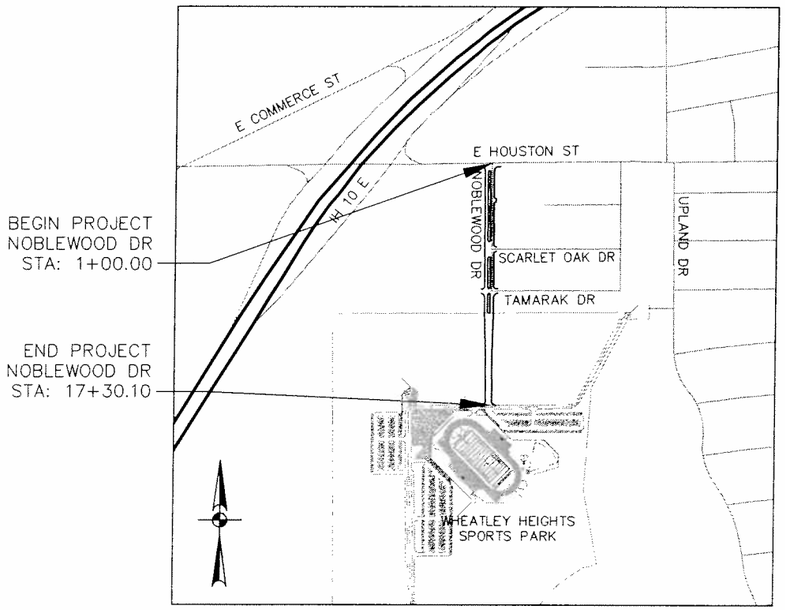
CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION



LOCATION MAP
N.T.S.

PLANS PREPARED BY:

PAPE-DAWSON ENGINEERS

555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010

TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

OUR MISSION: TOGETHER, DEDICATED TO OUR COMMUNITY... BUILDING A GREAT SAN ANTONIO

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SHEET NO.	DESCRIPTION
1.0	COVER SHEET
1.1	SHEET INDEX
1.2	PROJECT LAYOUT
1.3	PROJECT NOTES
1.4	ESTIMATE OF QUANTITIES
2.0	DEMOLITION PLAN
2.1	TRAFFIC CONTROL PLAN
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3.0–3.2	STREET PLAN AND PROFILE – STA 1+00 TO 17+30.10 (END)
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4.0	OVERALL DRAINAGE PLAN
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5.1–5.6	STREET SIGNAGE AND PAVEMENT MARKING DETAILS
6.0	STORMWATER POLLUTION PREVENTION PLAN
6.1	STORMWATER POLLUTION PREVENTION PLAN DETAILS

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DEPARTMENT OF PUBLIC WORKS

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INDEX OF SHEETS

30 % SUBMITTAL	PROJECT NO.: 7256-06		DATE: JULY 2011
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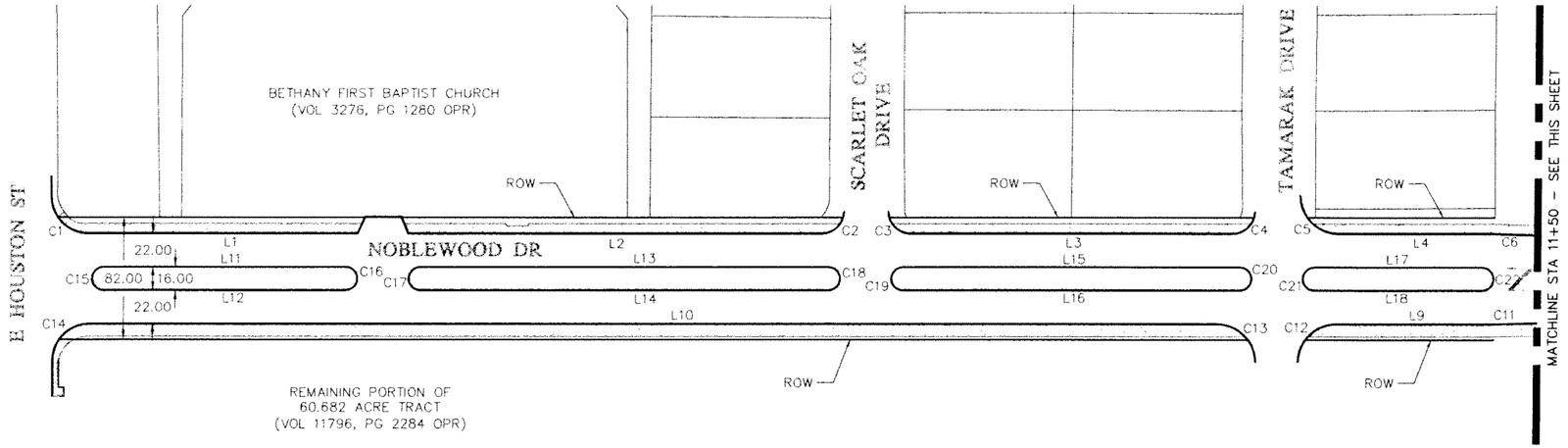

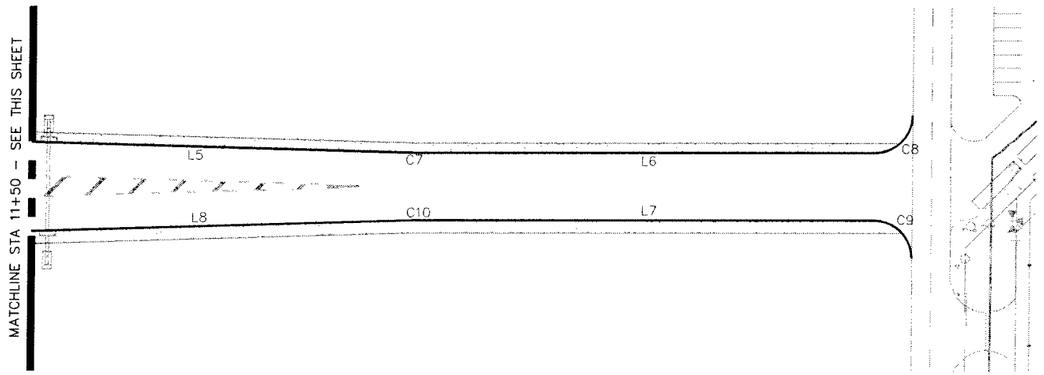

LEGEND

- BENCHMARK SYMBOL
- RIGHT-OF-WAY
- SIDEWALK

CURVE TABLE						
CURVE	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD	LENGTH
C1	25.00'	24.65'	89°11'39"	S44°19'42"W	35.11'	38.92'
C2	15.00'	15.01'	90°02'02"	S45°17'08"E	21.22'	23.57'
C3	15.00'	15.11'	90°24'08"	S44°55'57"W	21.29'	23.67'
C4	15.00'	15.01'	90°03'15"	S45°17'45"E	21.22'	23.58'
C5	26.00'	26.00'	90°00'00"	S44°43'53"W	36.77'	40.84'
C6	100.00'	1.43'	1°38'12"	N00°32'59"E	2.86'	2.86'
C7	100.00'	1.43'	1°38'12"	S00°32'59"W	2.86'	2.86'
C8	25.00'	25.04'	90°04'56"	S45°18'35"E	35.38'	39.31'
C9	25.00'	24.96'	89°55'03"	N44°41'24"E	35.33'	39.23'
C10	100.00'	1.43'	1°38'12"	N01°05'13"W	2.86'	2.86'
C11	100.00'	1.43'	1°38'12"	S01°05'13"E	2.86'	2.86'
C12	26.00'	26.00'	90°00'00"	N45°16'07"W	36.77'	40.84'
C13	26.00'	26.00'	90°00'00"	N44°43'53"E	36.77'	40.84'
C14	25.00'	25.17'	90°22'47"	N45°27'31"W	35.47'	39.44'
C15	8.00'	INFINITE'	179°27'45"	S90°00'00"W	16.00'	25.06'
C16	8.00'	INFINITE'	180°00'03"	N89°43'54"E	16.00'	25.13'
C17	8.00'	INFINITE'	180°00'03"	S89°43'55"W	16.00'	25.13'
C18	8.00'	INFINITE'	179°27'45"	N89°43'53"E	16.00'	25.06'
C19	8.00'	INFINITE'	179°27'45"	S89°43'53"W	16.00'	25.06'
C20	8.00'	INFINITE'	180°00'00"	N89°43'54"E	16.00'	25.13'
C21	8.00'	INFINITE'	179°59'52"	S89°43'53"W	16.00'	25.13'
C22	8.00'	INFINITE'	180°00'04"	N89°43'54"E	16.00'	25.13'

LINE TABLE		
LINE	BEARING	LENGTH
L1	S00°16'07"E	181.39'
L2	S00°16'07"E	277.87'
L3	N00°16'07"W	216.28'
L4	S00°16'07"E	103.63'
L5	S01°22'04"W	277.26'
L6	S00°16'07"E	303.04'
L7	S00°16'07"E	303.12'
L8	S01°54'19"E	277.26'
L9	S00°16'07"E	104.63'
L10	S00°16'07"E	757.53'
L11	N00°16'07"W	162.86'
L12	S00°16'07"E	162.86'
L13	N00°16'07"W	274.28'
L14	S00°16'07"E	274.28'
L15	N00°16'07"W	226.16'
L16	S00°16'06"E	226.49'
L17	N00°16'07"W	113.06'
L18	S00°16'07"E	113.06'

CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
403	13793046.9400	2138816.1812	1121.18	FOUND NAIL AND WASHER
500	13793160.0853	2139209.9337	1139.71	FOUND NAIL AND WASHER
600	13793108.9858	2137310.9429	1091.34	SET NAIL AND WASHER

SCALE : 1"=100'

0' 100'

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DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

PROJECT LAYOUT

30 % SUBMITTAL	PROJECT NO.: 7256-06		DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD	SHEET NO.: XXX OF XXX

Date: Jul 14, 2011, 9:14am User ID: MWright
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GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST.
2. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS, BUT NOT INCLUDED IN THE BID PROPOSAL. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES.
3. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES OR DRIVEWAYS. (NO SEPARATE PAY ITEM).
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED.
6. IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
7. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.171 C.P.S. MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
8. CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR TWENTY FOUR (24) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENSITY TEST AS REQUIRED (TELEPHONE NO. 532-2860).
9. CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION OPERATION:

SAN ANTONIO WATER SYSTEM (SAWS)	233-2010
BEXAR METROPOLITAN WATER DISTRICT (BEXAR MET)	354-6538 / 357-5741
COSA DRAINAGE	207-8048
COSA SIGNAL OPERATIONS	207-7720 / 207-7765
TEXAS STATE WIDE ONE CALL LOCATOR	1-800-344-8377
- CITY PUBLIC SERVICE ENERGY	1-800-545-6005
- TIME WARNER	1-800-545-6005
- AT&T	1-800-252-1133
- MCI	

11. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED, BUT SHALL BE INVESTIGATED AND VERIFIED BY THE CONTRACTOR BEFORE STARTING WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR THE MAINTENANCE AND PROTECTION OF THE EXISTING UTILITIES EVEN IF THEY ARE NOT SHOWN ON THE PLANS. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND HE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME DURING CONSTRUCTION.
12. ALL WASTE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE PROJECT. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.
13. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
14. THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND / OR TRACKED CONSTRUCTION MATERIALS AND / OR DEBRIS.
15. IF THE CONTRACTOR ENCOUNTERS ANY ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY, CONTACT THE CITY INSPECTOR, AND CALL THE CITY HISTORIC PRESERVATION OFFICE AT 207-7306 OR 207-3327 FOR AN ARCHAEOLOGICAL INVESTIGATION. THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE CITY.
    IF MORE THAN THREE (3) DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAY AND WEEKENDS) AND IF THE CONTRACTOR IS UNABLE TO WORK IN OTHER AREAS, THEN THE CONTRACTOR WILL BE ALLOWED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME UPON WRITTEN REQUEST WITHIN TEN (10) DAYS AFTER THE FIRST NOTICE TO THE CITY OF ARCHAEOLOGICAL INVESTIGATION FOR EACH EVENT.
    IF THE TIME REQUIRED FOR INVESTIGATION IS LESS THAN OR EQUAL TO THREE (3) DAYS FOR EACH EVENT, CONTRACT DURATION WILL NOT BE EXTENDED.
16. IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, C.O.S.A. SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND / OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER, TYPE OF CONTAMINATED MEDIA, EVIDENCE OF CONTAMINATION AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND / OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR C.O.S.A. APPROVAL.
    THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE C.O.S.A. INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM THE CITY.
17. CONTRACTOR IS TO INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.

TREE PROTECTION AND PRESERVATION GENERAL NOTES

1. NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
2. TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX-INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY ITEM).
3. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
4. ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.
5. ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).
6. EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.
7. NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS 1 FOOT OF RADIUS PER INCH OF TREE'S DIAMETER. A 10-INCH DIAMETER TREE WOULD HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.
8. SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.
9. NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
10. TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT-OF-WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROPERLY PRUNED FOLLOWING THE ANSI A-300 STANDARDS FOR PRUNING. ALL TREE PRUNING SHALL BE COMPLETED BY A CITY OF SAN ANTONIO TREE MAINTENANCE LICENSED CONTRACTOR (ARTICLE 21-171, CITY CODE) ONLY AFTER APPROVAL FROM THE CAPITAL PROJECTS MANAGEMENT THROUGH THE INSPECTOR.
11. NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.
12. ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND / OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY (NO SEPARATE PAY ITEM).
13. TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE, BUT NOT LIMITED TO: WATERING THE ROOT PROTECTION ZONE, WASHING FOLIAGE, FERTILIZATION, PRUNING, ADDITIONAL MULCH APPLICATIONS AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT.
14. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-8053)
15. TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
16. TREE PLANTING FOR MITIGATION OR ENHANCEMENT: ALL PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATION, FERTILIZING, PRUNING AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT. TREES THAT DIE WITHIN TWELVE (12) MONTHS SHALL BE REPLACED WITH A TREE OF EQUAL SIZE AND SPECIES.

ACCESSIBILITY REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.
2. WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OR GRAVEL MATERIAL AT NO SEPARATE COST TO THE CITY.
3. PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON, OR IN WRITING, OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED, SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.
4. FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY, AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST

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CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

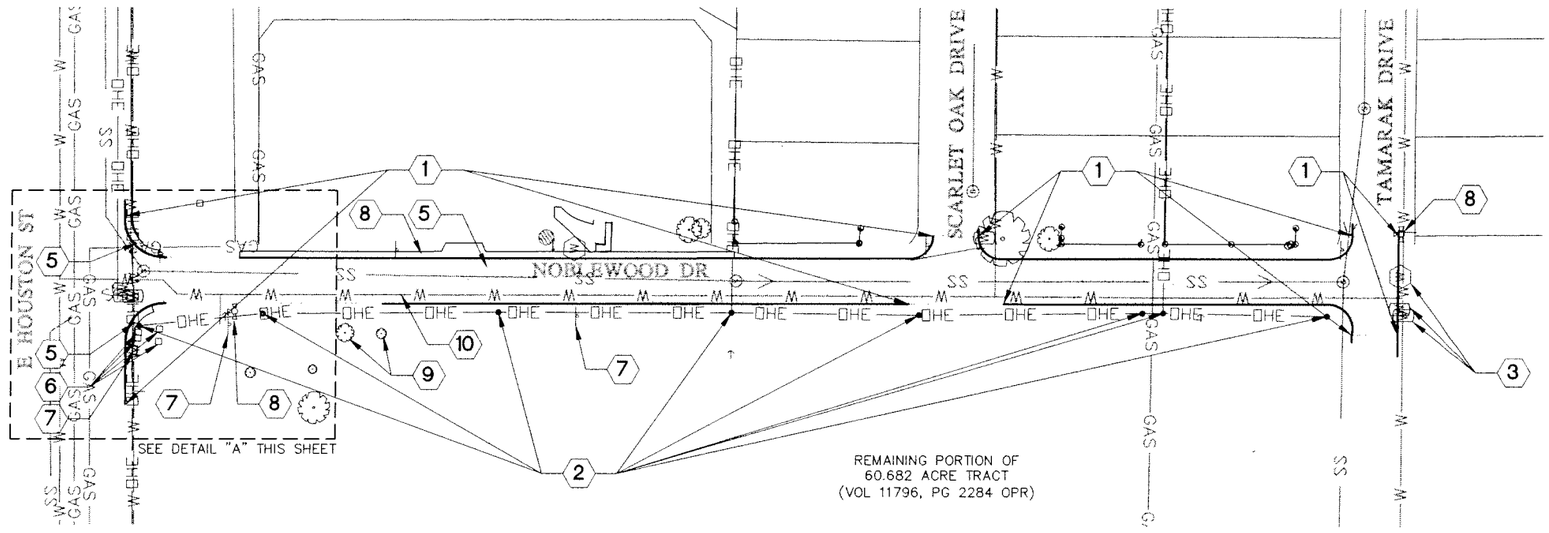
NOBLEWOOD DR. STREET EXPANSION

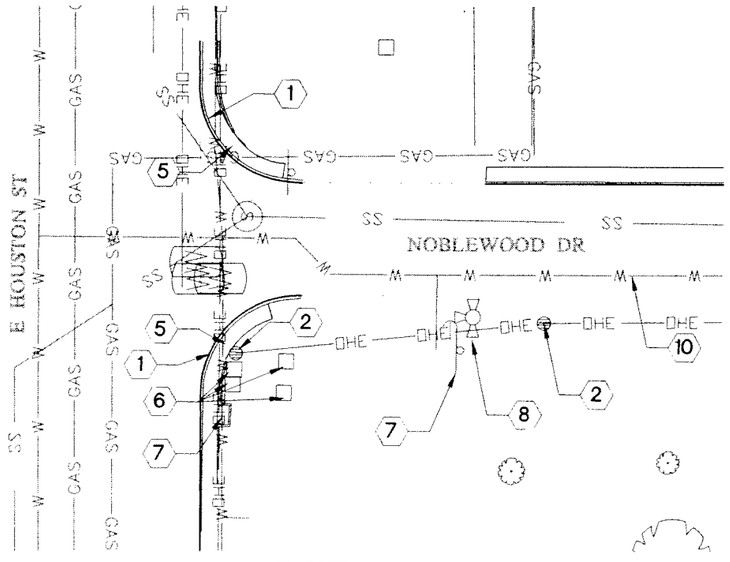
GENERAL NOTES

30 % SUBMITTAL	PROJECT NO.: 7258-08		DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD	SHEET NO.: X.XX OF X.XX

DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS/APPROVALS BEFORE BEGINNING CONSTRUCTION.
2. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT THROUGHOUT ALL PHASES OF CONSTRUCTION.
3. SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING FROM THE SITE ALL ITEMS SHOWN TO BE DEMOLISHED UNLESS OTHERWISE INDICATED OR NOTES. ALL MATERIALS SHALL BE DEMOLISHED FROM SITE IN ACCORDANCE WITH ALL APPLICABLE, FEDERAL, STATE AND LOCAL REGULATION.
4. ALL EXISTING ITEMS NOT SPECIFICALLY NOTED TO BE DEMOLISHED SHALL REMAIN. CONTRACTOR IS RESPONSIBLE FOR REPLACING EXISTING ITEMS REMOVED DURING DEMOLITION THAT WERE TO REMAIN.
5. THE CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW PAVEMENT, CURB AND SIDEWALK JUNCTURES, NO JAGGED OR IRREGULAR CUTS WILL BE ACCEPTED.
6. ALL NECESSARY EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO CONSTRUCTION/DEMOLITION. EROSION CONTROL MEASURES ARE TO BE MAINTAINED AND IN WORKING CONDITION AT ALL TIMES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGES DONE TO EXISTING UTILITIES, FENCES, WALLS, PAVEMENT, CURB OR DRIVEWAYS (NO SEPARATE PAY ITEM)
8. CONTRACTOR TO REMOVE APPROXIMATELY __ LF OF EXISTING ROCK WALL AND REPLACE WITH WROUGHT IRON (OR EQUIVALENT) PANELS THAT DO NOT IMPEDE STORMWATER FLOW. FENCE PANEL SHOULD BE A MINIMUM OF SIX INCHES ABOVE THE GROUND.





DETAIL "A"
SCALE 1" = 40'

LEGEND

OHE OHE	EXISTING OVERHEAD ELECTRIC, POLE AND GUY
SS	EXISTING SANITARY SEWER
W	EXISTING WATER LINE
GAS	EXISTING GAS LINE
	EXISTING SIGN
W	EXISTING WATER VALVE
W	EXISTING WATER METER
	EXISTING FIRE HYDRANT
S	EXISTING SANITARY SEWER MANHOLE
	EXISTING FLAG POLE
	EXISTING FIBER OPTIC MARKER
	EXISTING GATE

KEYED NOTES

1. REMOVE CONCRETE CURB – 1513 LF
2. RELOCATE EIGHT ELECTRICAL POWER POLES AND LINE
3. RELOCATE TWO WATER VALVES AND ONE WATER METER
4. EXISTING ASPHALT TO BE DEMOLISHED – 3002 SY
5. EXISTING 4' SIDEWALK TO BE DEMOLISHED – 196 SY
6. RELOCATE FOUR TELECOMMUNICATIONS PEDESTALS
7. RELOCATE SIGN
8. RELOCATE FIRE HYDRANT
9. REMOVE TWO TREES
10. EXISTING WATER LINE TO BE REMOVED AND REPLACED

SCALE : 1"=100'

0' 100'

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DEMOLITION PLAN

30 % SUBMITTAL	PROJECT NO.: 7256-08		DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JO	SHEET NO.: X.XX OF X.XX

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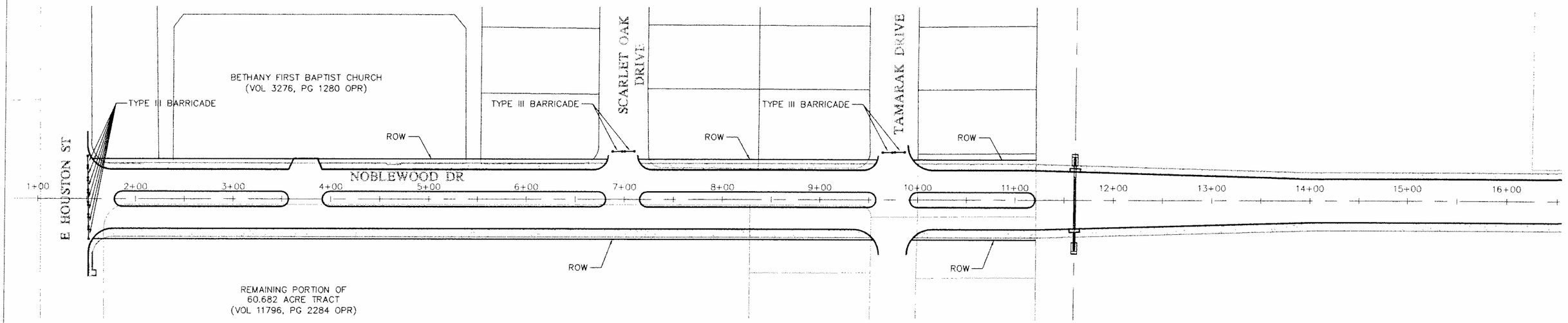


GENERAL NOTES

1. CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

2. DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

3. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.

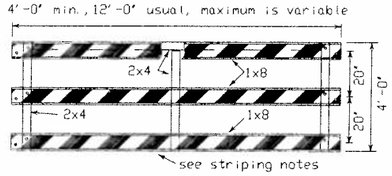
4. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

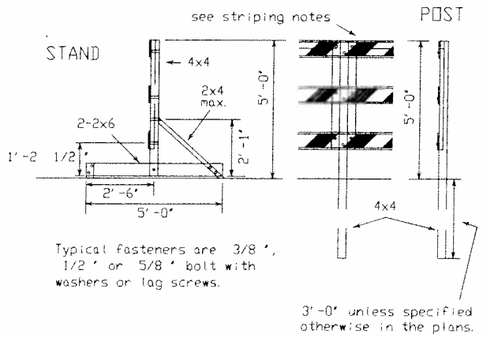
BARRICADES

TYPE III

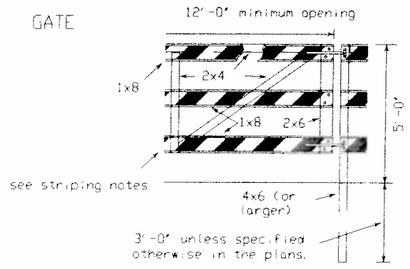
The three (3) rails on Type III barricades shall be reflective orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

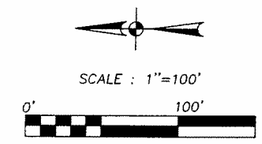
PANEL



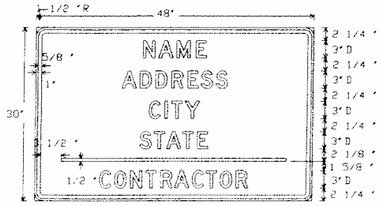


GATE





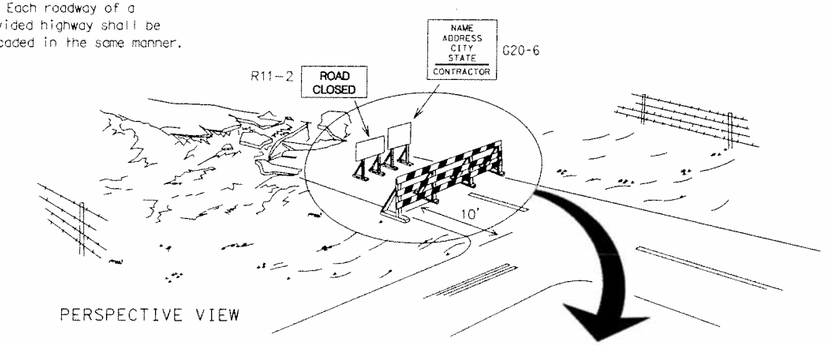
R11-2
48" X 30"
Letters - Black
Border - Black
Background - White Refl.



SG20-6
48" X 30"
Letters - Black
Border - Black
Background - Orange Refl. or White Refl. (optional)

TYPE III BARRICADE (POST AND SKID) TYPICAL APPLICATION

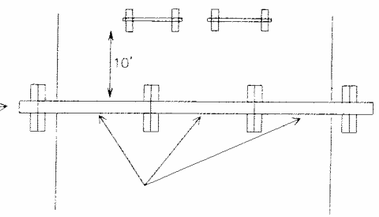
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type III barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

Barricade striping should slant downward in the direction of detour.



PLAN VIEW

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

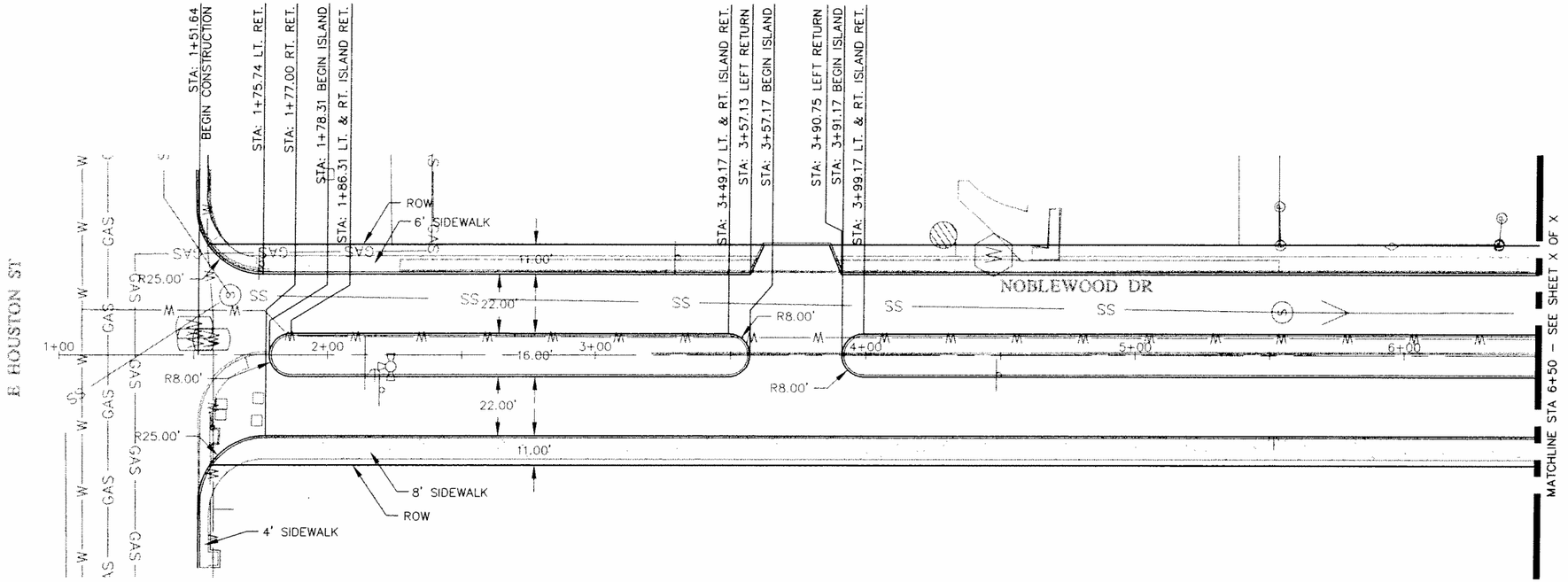
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

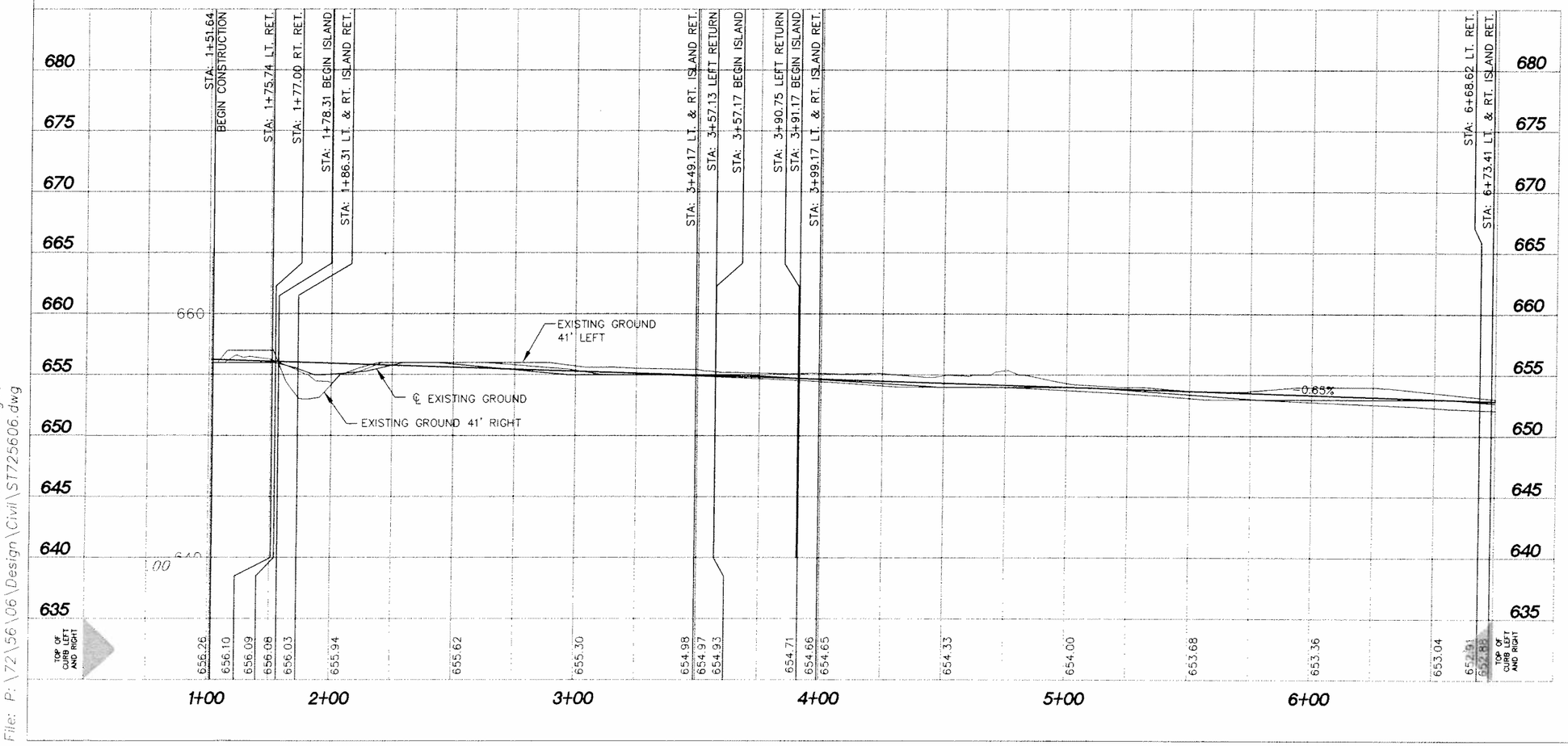
NOBLEWOOD DR. STREET EXPANSION

TRAFFIC CONTROL PLAN

30 % SUBMITTAL	PROJECT NO.: 7256-08		DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD	SHEET NO.: X.XX OF X.XX

Date: Jul 14, 2011, 9:14am User ID: MWright
File: P:\72\56\06\Design\Civil\TC725606.dwg





LEGEND

OHE — OHE	EXISTING OVERHEAD ELECTRIC, POLE AND GUY
SS — SS	EXISTING SANITARY SEWER AND MANHOLE
W — W	EXISTING WATER LINE
GAS — GAS	EXISTING GAS LINE
	EXISTING SIGN
W	EXISTING WATER VALVE
W	EXISTING WATER METER
	EXISTING FIRE HYDRANT
	EXISTING FLAG POLE
	EXISTING FIBER OPTIC MARKER
	EXISTING GATE
CL	CENTERLINE
PI	POINT OF INTERSECTION
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PVC	POINT VERTICAL CURVATURE
PVT	POINT VERTICAL TANGENCY
ROW	RIGHT OF WAY
RET	RETURN
1091.37	TOP OF CURB SPOT ELEVATION
1091.37	TOP OF PAVEMENT ELEVATION
	DRAINAGE FLOW ARROW

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION

EXISTING UTILITIES ARE WITHIN THE PROJECT AREA. CONTRACTOR TO VERIFY ALL BURIED UTILITIES WHETHER SHOWN ON THE UTILITY LAYOUT OR NOT. ANY DAMAGED UTILITIES SHALL BE REPAIRED AND/OR REPLACED BY THE CONTRACTOR AT CONTRACTOR'S SOLE EXPENSE.

SCALE : 1"=50'

0' 50'

SCALE: HORZ 1" = 50'
VERT 1" = 10'

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DEPARTMENT OF PUBLIC WORKS

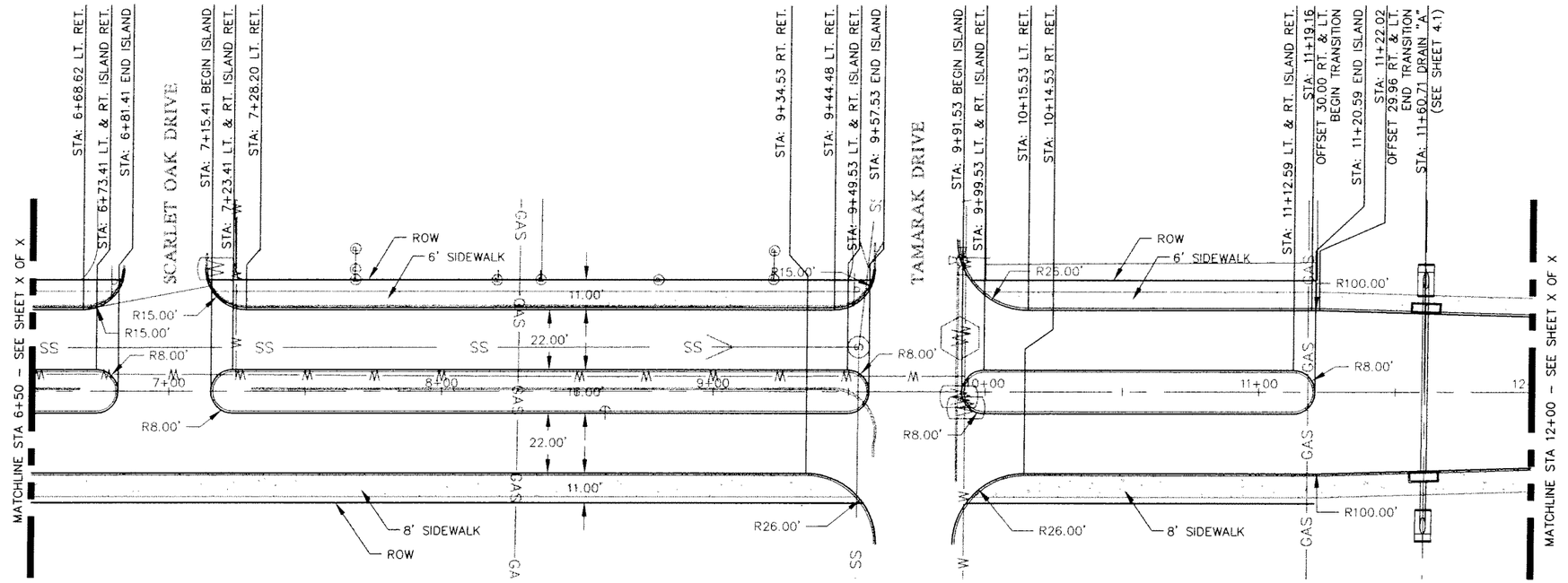
NOBLEWOOD DR. STREET EXPANSION

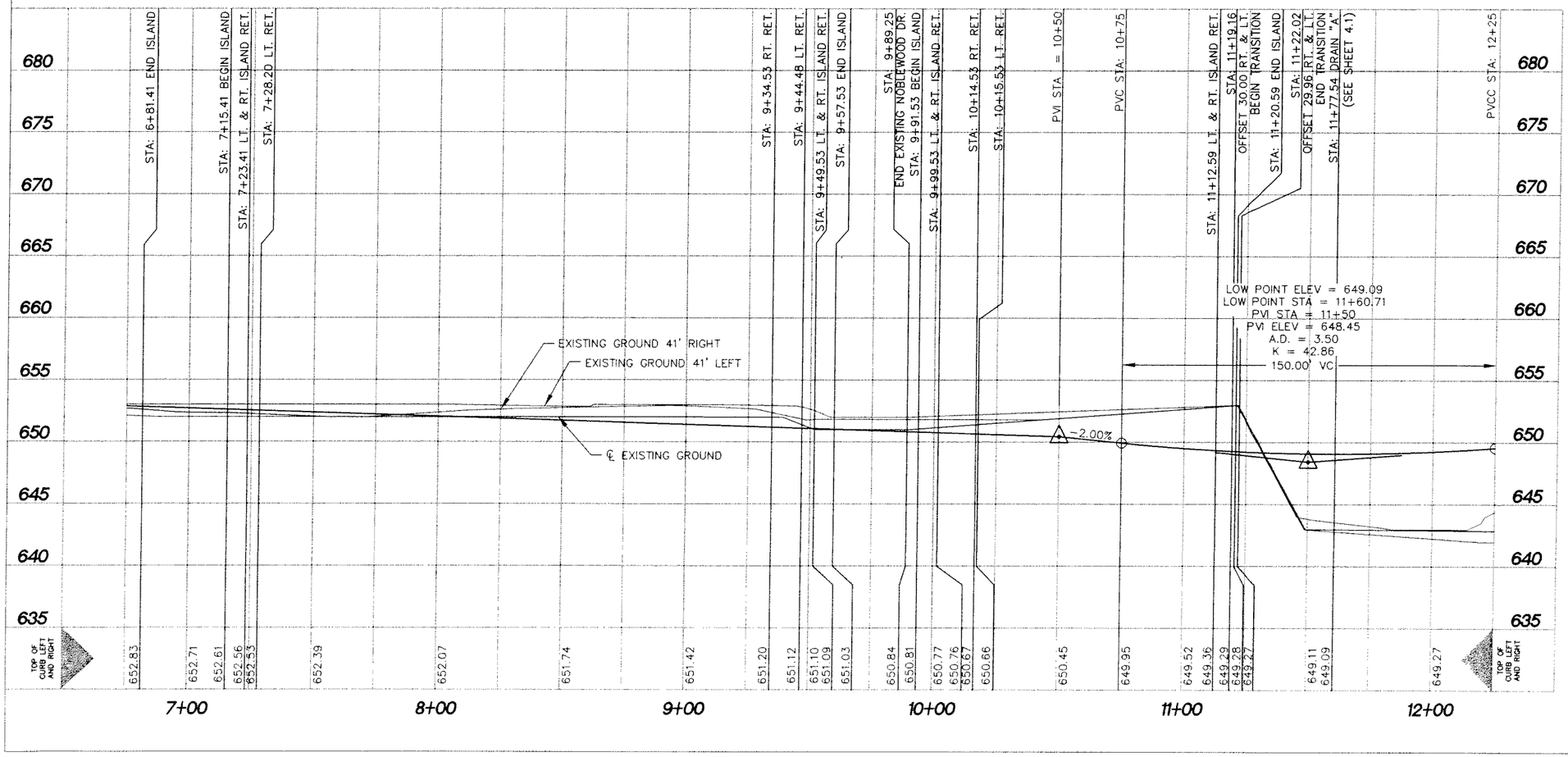
PLAN AND PROFILE

STA 1+00 TO STA 6+50

30 % SUBMITTAL	PROJECT NO.: 7258-08			DATE: JULY 2011	
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD		SHEET NO.: X.XX OF X.XX	

Date: Jul 14, 2011, 9:14am User ID: MWright
File: P:\7256\06\Design\Civil\ST725606.dwg





LEGEND

—OHE—OHE—	EXISTING OVERHEAD ELECTRIC, POLE AND GUY
S	EXISTING SANITARY SEWER AND MANHOLE
W	EXISTING WATER LINE
GAS	EXISTING GAS LINE
	EXISTING SIGN
W	EXISTING WATER VALVE
W	EXISTING WATER METER
	EXISTING FIRE HYDRANT
	EXISTING FLAG POLE
	EXISTING FIBER OPTIC MARKER
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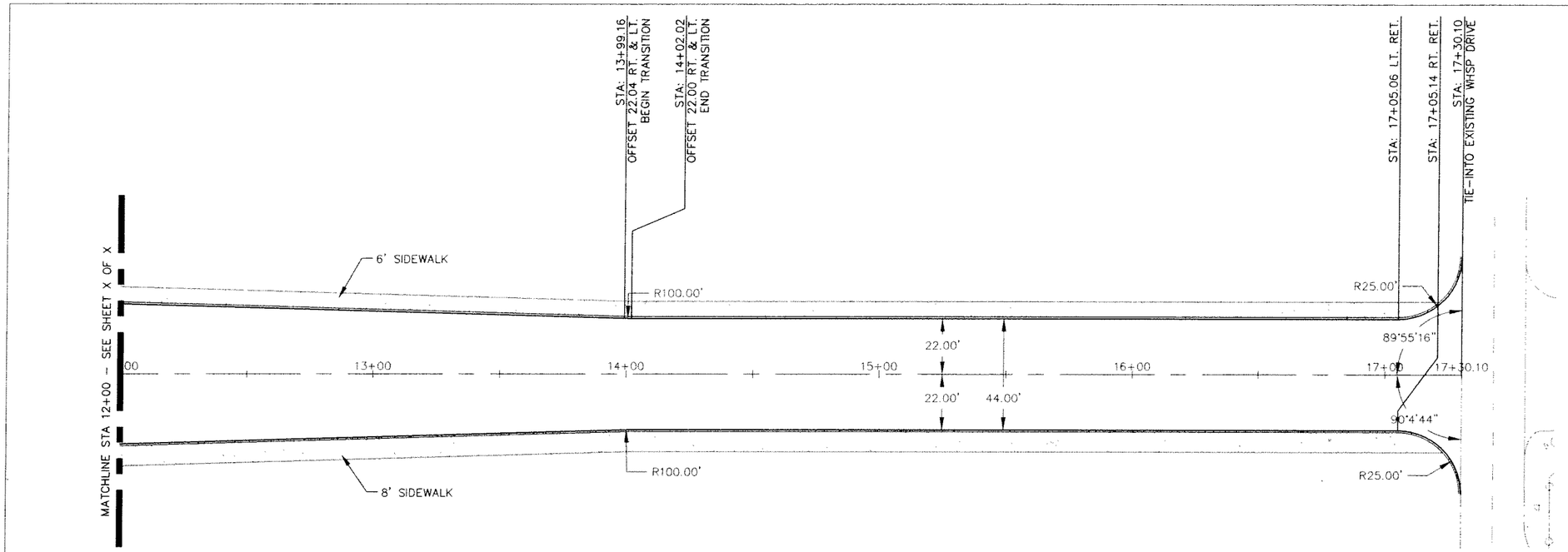
DEPARTMENT OF PUBLIC WORKS

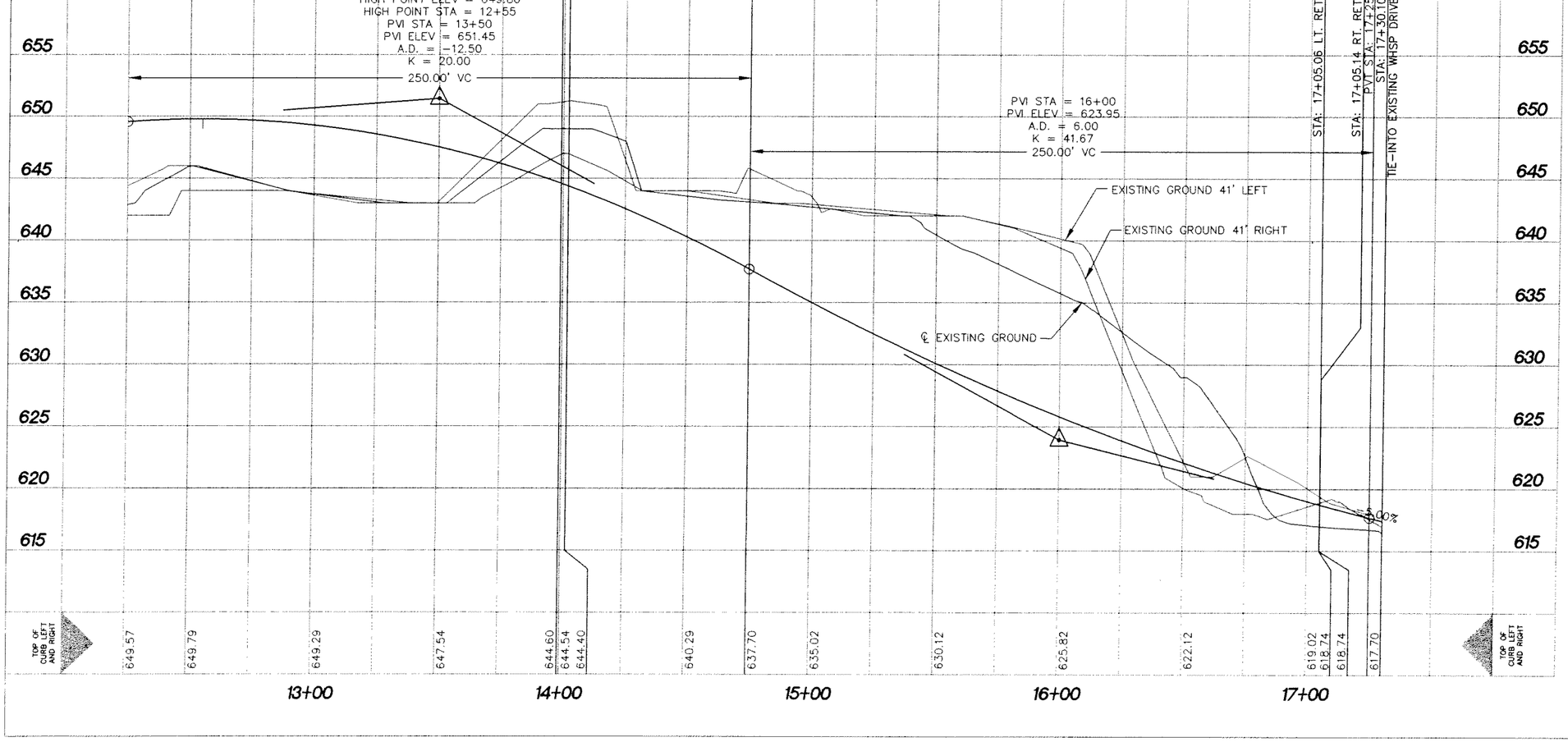
NOBLEWOOD DR. STREET EXPANSION

PLAN AND PROFILE

STA 6+50 TO STA 12+00

30 % SUBMITTAL	PROJECT NO.:	7256-08		DATE:	JULY 2011
DRWN. BY: MW	DSGN. BY: TD		CHKD. BY: JD		SHEET NO.: X.XX OF X.XX





LEGEND

—OHE—OHE—	EXISTING OVERHEAD ELECTRIC, POLE AND GUY
S	EXISTING SANITARY SEWER AND MANHOLE
A A	EXISTING WATER LINE
GAS	EXISTING GAS LINE
	EXISTING SIGN
W	EXISTING WATER VALVE
W	EXISTING WATER METER
	EXISTING FIRE HYDRANT
	EXISTING FLAG POLE
	EXISTING FIBER OPTIC MARKER
	EXISTING GATE
CL	CENTERLINE
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0' 50'

SCALE: HORZ 1" = 50'
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DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

PLAN AND PROFILE

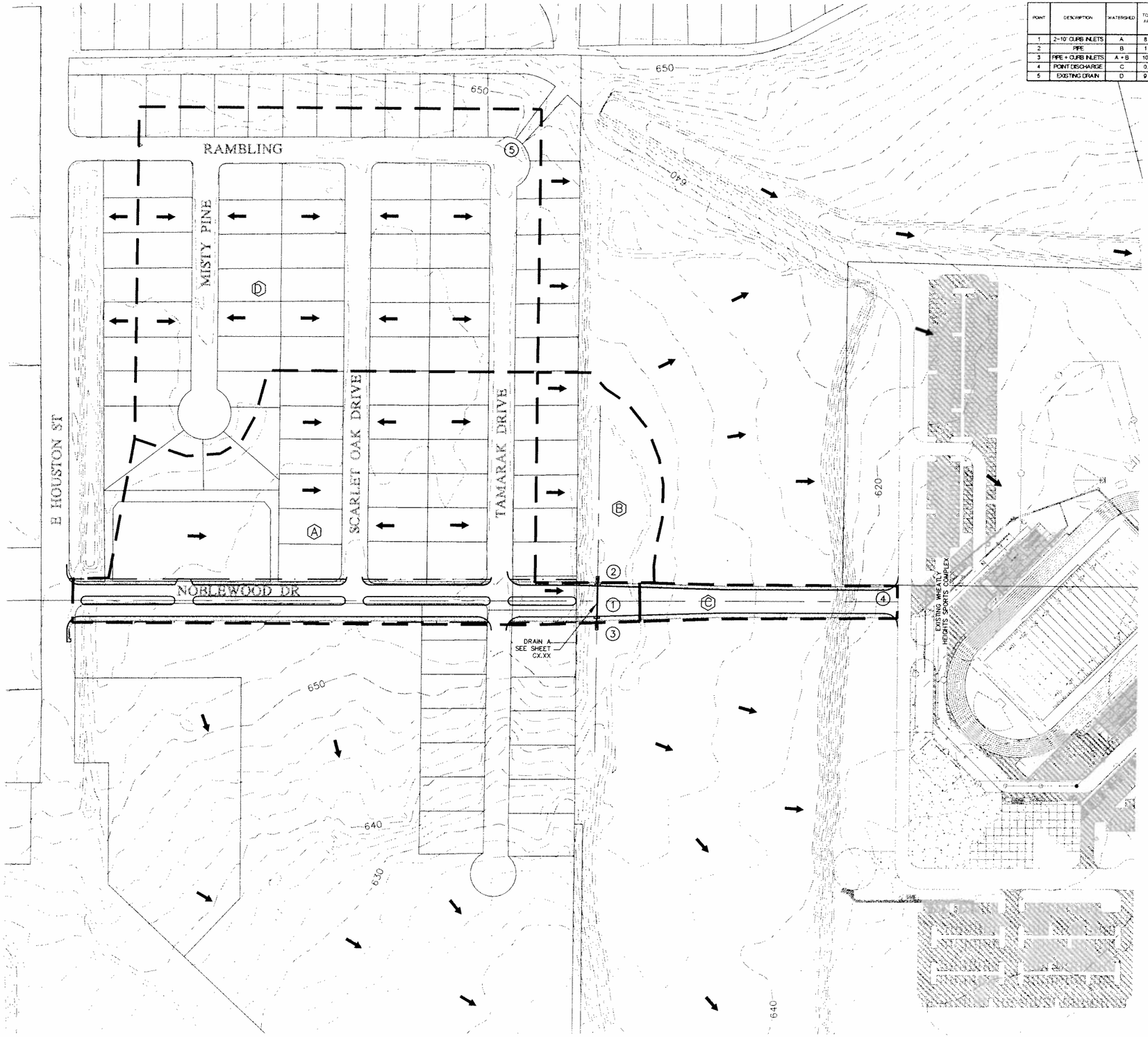
STA 12+00 TO STA 17+30.10 (END)

30 % SUBMITTAL	PROJECT NO.: 7258-08			DATE: JULY 2011	
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD		SHEET NO.: XXX OF XXX	

Date: Jul 14, 2011, 9:14am User ID: MWright
File: P:\7256\06\Design\Civil\ST725606.dwg

RUNOFF COMPUTATIONS

POINT	DESCRIPTION	WATERSHED	TOTAL AREA	COMPOSITE C VALUE	OVERLAND FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW (6 FPS)		TIME OF CONCENTRATION	INTENSITY			FLOW		
					LENGTH	TRAVEL TIME	LENGTH	TRAVEL TIME	LENGTH	TRAVEL TIME		I_5	I_{25}	I_{100}	Q_5	Q_{25}	Q_{100}
					FEET	MINUTES	FEET	MINUTES	FEET	MINUTES	MINUTES	IN/HR	IN/HR	IN/HR	CFS	CFS	CFS
1	2-10' CURB INLETS	A	8.39	62	175	19	0	0.0	910.0	2.0	21	4.59	6.03	7.87	23.9	31.4	40.9
2	PIPE	B	1.95	55	300	22	153	1.0	0.0	0.0	23	4.37	5.75	7.37	4.7	6.2	7.9
3	PIPE + CURB INLETS	A + B	10.34	61	175	19	0	0.0	910.0	2.0	21	4.59	6.03	7.87	28.8	37.8	49.4
4	POINT DISCHARGE	C	0.73	95	0	0	0	0.0	500.0	5.0	5	8.40	11.10	13.54	5.8	7.7	9.4
5	EXISTING DRAIN	D	9.57	72	175	19	0	0.0	1035.0	3.0	22	4.48	5.89	7.81	30.9	40.6	52.4



LEGEND

- DRAINAGE AREA BOUNDARY
- (D) INTERIOR DRAINAGE AREA
- (1) STUDY POINT
- FLOW ARROW
- DRAINAGE AREA BOUNDARY

NOTES:

1. DRAINAGE AREAS WERE DELINEATED USING EXISTING 2-FT CONTOUR DATA AND FIELD SURVEY TOPOGRAPHIC INFORMATION.
2. C-VALUES WERE DEVELOPED USING COSA UDC ULTIMATE CONDITIONS.
3. FREQUENCIES WERE DEVELOPED USING THE UDC 25-YR STORM EVENT.
4. DRAINAGE AREAS DEVELOPED ASSUMING ULTIMATE CONDITION DEVELOPMENT.

SCALE : 1"=200'

0' 200'

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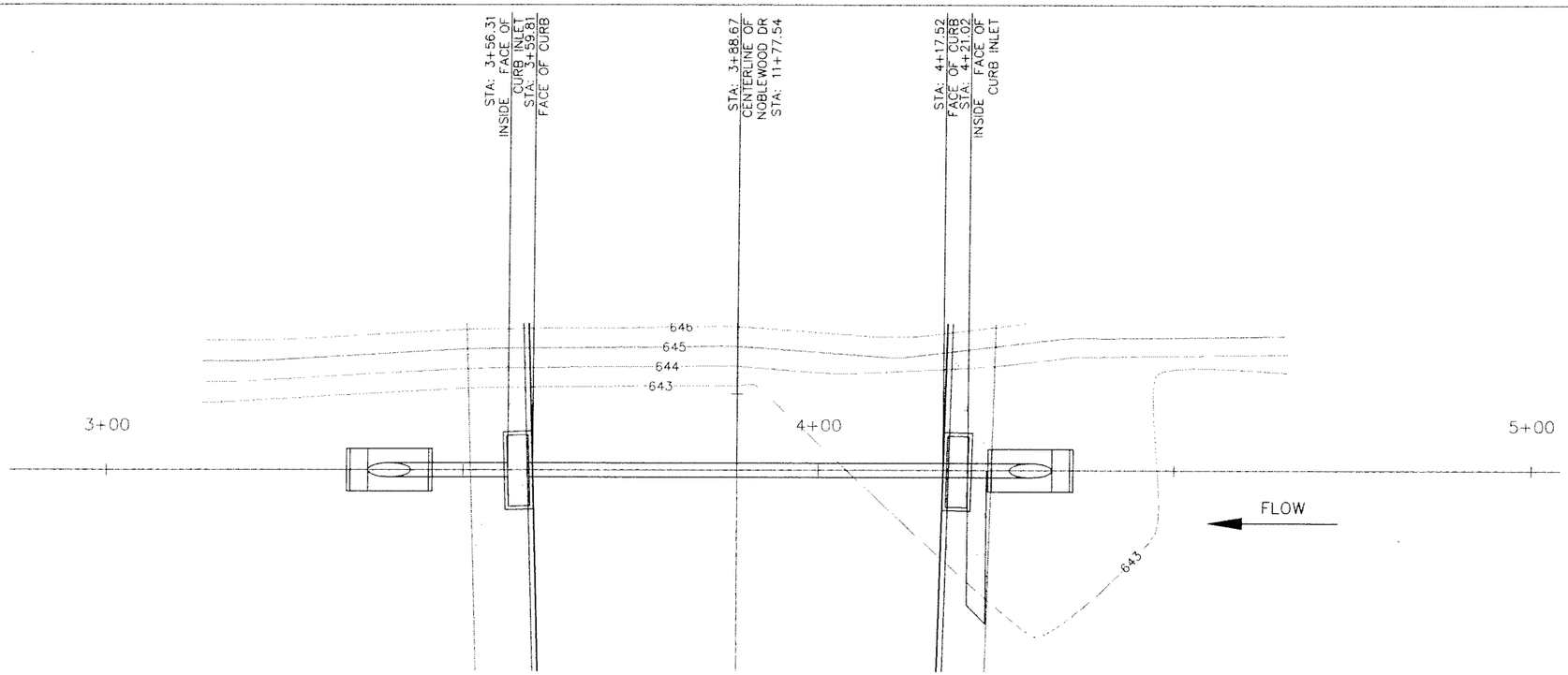
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

DRAINAGE AREA MAP

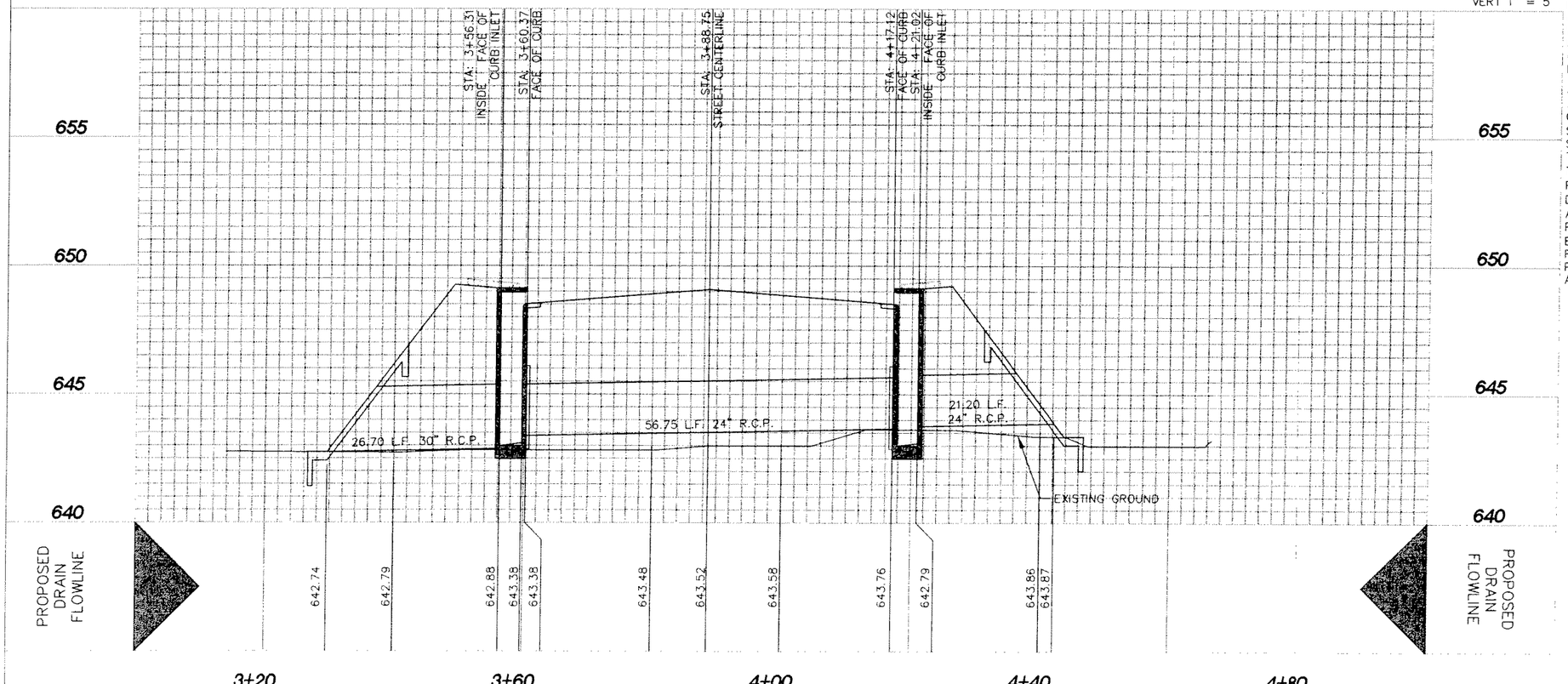
30 % SUBMITTAL	PROJECT NO.: 7258-06			DATE: JULY 2011	
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD		SHEET NO.: X.XX OF X.XX	

Date: Jul 14, 2011, 9:14am User ID: MWright
File: P:\72\56\06\Design\Civil\OD725606.dwg



DRAIN "A"

SCALE: HORZ 1" = 20'
VERT 1" = 5'



PIPE HYDRAULICS
(STA. X+XX.XX TOX+XX.XX)

Q_{100} = 17,184 CFS

Q_{100} PER BARREL = 859.20 CFS

n = 0.013

A = 100.0 SF

Sf = 0.0020 FT/FT

SLOPE = 0.0030 FT/FT

V = 8.59 FT/SEC

Dn = 10.0 FT

CAUTION:

CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.

NOTES:

ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 P.S.I. IN 28 DAYS.

TOPO NOTE:

THE EXISTING CONTOURS ARE FROM FIELD SURVEY. THE CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO THE START OF EXCAVATION IF SIGNIFICANT ELEVATION DIFFERENCES ARE ENCOUNTERED PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL HAVE NO CLAIM FOR CHANGE ORDERS WHICH WOULD INCREASE THE OVERALL COST OF CONSTRUCTION RESULTING FROM INCREASES IN STREET, DRAINAGE, AND UTILITY EXCAVATION DUE TO THE CONTRACTORS FAILURE TO NOTIFY THE ENGINEER PRIOR TO THE START OF EXCAVATION.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SCALE : 1"=20'

0' 20'

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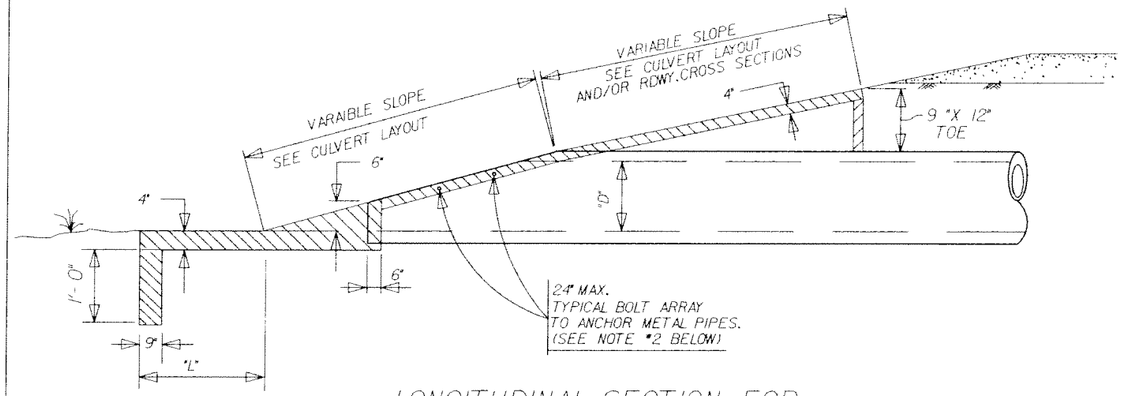
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

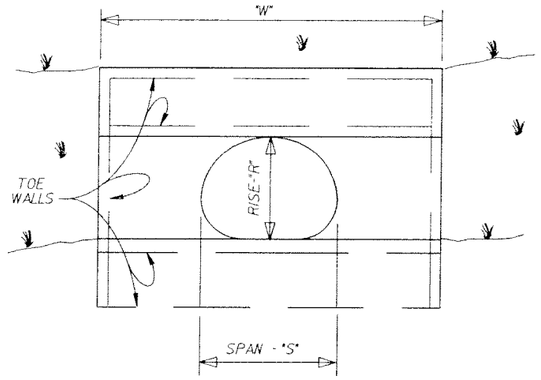
DRAIN "A" PLAN AND PROFILE

STA 1+00 TO END

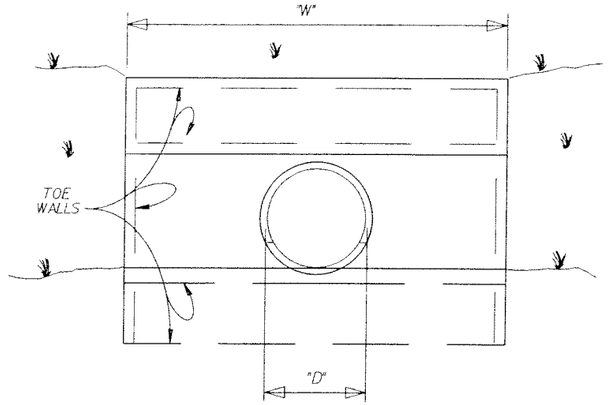
30 % SUBMITTAL	PROJECT NO.: 7258-08		DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD	SHEET NO.: X.XX OF X.XX



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT



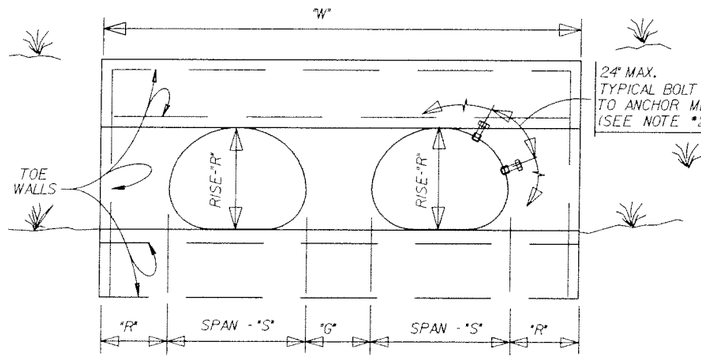
SINGLE CIRCULAR PIPE CULVERT

(CMP or RCP)

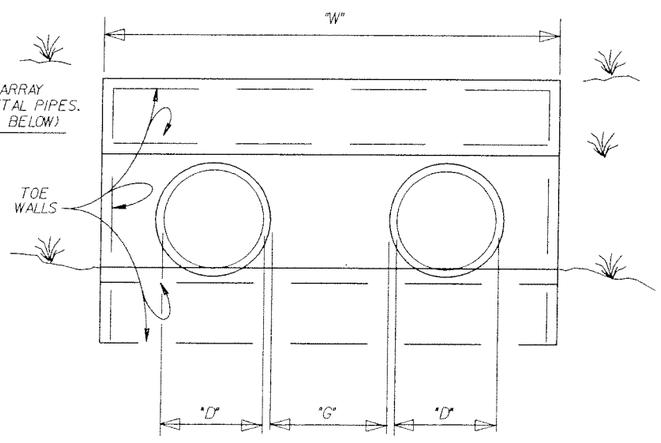
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"D" INSIDE DIA. of PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP	"W"			
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"	18'-10"	23'-9"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	21'-10"	27'-6"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	31'-3"
54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	35'-6"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	39'-6"

"G" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.



MULTIPLE C.M.P. ARCH PIPE CULVERT



MULTIPLE CIRCULAR PIPE CULVERT

(CMP or RCP)

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX. ARCH DIM.		"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
	SPAN "S"	RISE "R"			"W"			
2	21"	15"	2'-0"	1'-2"	4'-3"	7'-2"	10'-1"	13'-0"
3	28"	20"	3'-0"	1'-5"	5'-8"	9'-5"	13'-2"	16'-11"
4	35"	24"	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29"	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33"	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38"	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43"	8'-0"	2'-10"	12'-5"	20'-8"	28'-10"	37'-0"
9	71"	47"	9'-0"	3'-2"	13'-9"	22'-10"	31'-11"	41'-0"

BASED ON 2-2/3" X 1/2" CORRUGATION
"G" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.

NOTES:

1.) FOR RIPRAP QUANTITIES AND SLOPES, SEE CULVERT LAYOUT SHEET. CONCRETE SHALL BE CLASS B UNLESS OTHERWISE SHOWN IN THE PLANS.

2.) ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WORK WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL.

3.) FOR CONCRETE ARCH PIPES, THE CMP ARCH PIPE CULVERT DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.

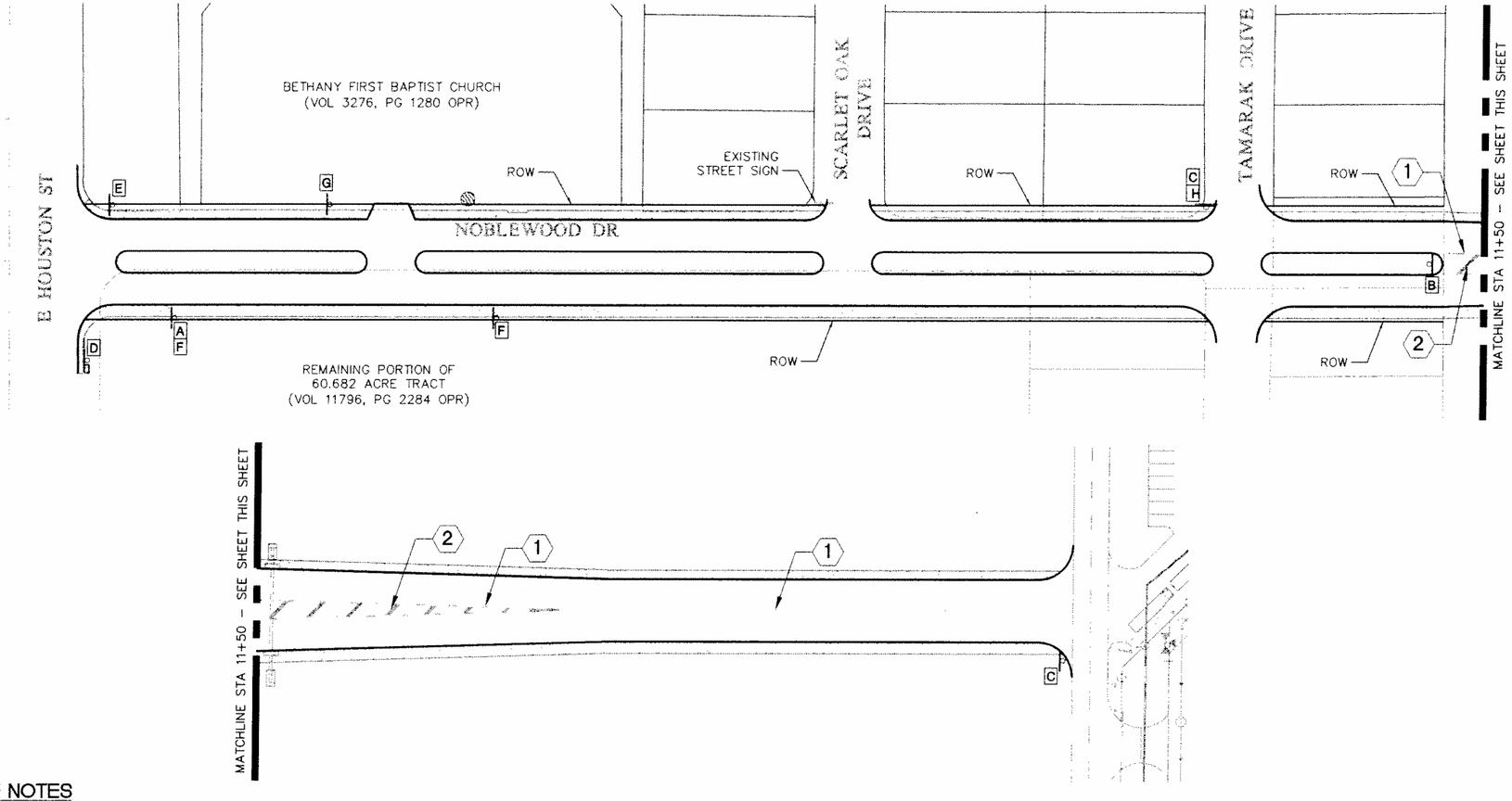
4.) FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN ITEMS 460 AND/OR 464.

5.) IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

SAN ANTONIO DISTRICT STANDARD
RIPRAP HEADWALL

FED.RD. DIV.NO.	PROJECT NO.			SHEET NO.
6				
STATE	STATE DISTRICT	COUNTY		
TEXAS	SAT			
CONT.	SECT.	JOB	HIGHWAY NO.	

10/95



LEGEND

1. 4" WIDE DOUBLE YELLOW LINE (SOLID) WITH TYPE II-A-A PAVEMENT MARKERS @ 20' OC – 848 LF
2. 24" WIDE YELLOW LINE (DIAGONAL) – 94 LF

SYMBOL	ITEM NUMBER
SPEED LIMIT 30	A R2-1 SPEED LIMIT 30 (24" x 30")
	B R4-7 KEEP RIGHT (24" x 30")
STOP	C R1-1 STOP (30" x 30")
	D RELOCATED BUS STOP SIGN
	E RELOCATED STOP SIGN
	F RELOCATED NO DUMPING SIGN
	G RELOCATED "CELLULAR ON PATROL" SIGN
	H RELOCATED STREET SIGN

SIGNAGE NOTES

1. UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT. CONTRACTOR SHALL HAVE THE UTILITIES MARKED PRIOR TO INSTALLATION OF THE SIGN POST. SIGN LOCATIONS ILLUSTRATED ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE SIGNS TO AVOID UTILITIES. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES BEFORE COMMENCING WORK.

2. IN ACCORDANCE WITH THE UNDERGROUND FACILITY DAMAGE PREVENTION ACT THE TELEPHONE NUMBER FOR A UTILITY LOCATOR IS 1-800-545-6005. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS FOR UTILITY LOCATORS, AS NEEDED.

3. WHEN PREPARING HOLES FOR POSTS, CARE SHALL BE TAKEN SO AS NOT TO RUPTURE EXISTING DRAINAGE STRUCTURES, SPRINKLER SYSTEMS, TELECOMMUNICATIONS FACILITIES, ELECTRICAL CONDUITS AND PUBLIC UTILITIES.

4. ALL SIGNS SHALL COMPLY WITH THE SIGN DESIGNS PRESENTED IN STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS OR THE MILLENNIUM STANDARD HIGHWAY SIGN DESIGNS, IF A MILLENNIUM SIGN IS SPECIFIED ON THE PLANS.

5. LOCATIONS ILLUSTRATED ON THE PLANS ARE APPROXIMATE. PLACEMENT AT SIGNS SHALL BE AT PROPERTY LOT LINES AND SHALL BE LOCATED IN THE FIELD TO PROVIDE APPROPRIATE FUNCTIONALITY. SIGN LOCATIONS SHALL COMPLY WITH GUIDELINES AND REQUIREMENTS PRESENTED IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

6. CONTRACTOR SHALL FURNISH AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, LIGHTING, OR WARNING DEVICES REQUIRED TO COMPLETE THE WORK. ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

7. THREE (3) COPIES OF EQUIPMENT SUBMITTALS FOR ALL TRAFFIC SIGN COMPONENTS SHALL BE SENT TO THE ENGINEER. SUBMITTALS SHALL CONSIST OF THE APPROPRIATE COMBINATION OF CATALOG SHEETS, MATERIAL LISTS, MANUFACTURER'S BROCHURES, TECHNICAL BULLETINS, SPECIFICATIONS, DIAGRAMS, OR PRODUCT SAMPLES NECESSARY TO DESCRIBE A SYSTEM, PRODUCT, OR ITEM. SPECIFIC ITEM NUMBERS AND PRODUCT CODES WILL BE CLEARLY IDENTIFIED WHEN MULTIPLE PRODUCTS ARE LISTED ON THE SAME SHEET.

8. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL CONFORM TO APPLICABLE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION), TEXAS DOT STANDARD SPECIFICATIONS, CITY BUILDING CODE AND REGULATIONS AS WELL AS PROVISIONS APPLICABLE TO THE PROJECT AND AS OTHER SAFETY CODES AND INSPECTION REQUIREMENTS OF THE FIRE DEPARTMENT.

9. MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, UN-DEPRECIATED STOCK. ALL EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE ON THE PLANS.

10. CONTRACTOR SHALL FURNISH AND INSTALL ALL PERMANENT SIGNS ILLUSTRATED ON THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY HARDWARE FOR MOUNTING. ALL SIGNS WITH A WHITE BACKGROUND SHALL BE FABRICATED WITH ENGINEER GRADE REFLECTIVE SHEETING (TXDOT TYPE A). ALL SIGNS WITH NON-WHITE BACKGROUNDS SHALL BE FABRICATED WITH HIGH SPECIFIC INTENSITY REFLECTIVE SHEETING (TXDOT TYPE C).

11. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL CONDITION, OR BETTER, ANY DAMAGE DONE TO EXISTING BUILDINGS, RETAINING WALLS, UTILITIES, FENCES, PAVEMENT, CURBS OR DRIVEWAYS (NO SEPARATE PAY ITEM). CONTRACTOR SHALL RESTORE THE CONSTRUCTION AREA TO ORIGINAL CONDITION, OR BETTER, PRIOR TO FINAL INSPECTION.

12. ANY CONFLICT BETWEEN ANY DEFINITION, MATERIAL SPECIFICATION, CONSTRUCTION SPECIFICATION, MEASUREMENT AND PAYMENT PROCEDURE, ETC., SHOWN IN THIS PLAN SET AND ANY TEXAS DEPARTMENT OF TRANSPORTATION OR CITY OF SAN ANTONIO STANDARD SPECIFICATION SHALL BE RESOLVED ONLY BY THE ENGINEER AND THE ENGINEER'S DECISION SHALL BE FINAL AND BINDING.

GENERAL NOTES

1. THE PROJECT GENERAL NOTES MAY SPECIFY A PARTICULAR SIGN SUPPORT.
2. SUPPORT AND DESIGN SHALL CONFORM WITH AASHTO STANDARD SUPPORTS OF HIGHWAY SIGNS.
3. LUMINARIES AND TRAFFIC SIGNALS WITH A DESIGN WIND SPEED OF 70 MPH.
4. STEEL PIPE SHALL BE GALVANIZED IN ACCORDANCE TO ASTM DESIGNATION A123.
5. WHERE SOLID ROCK IS ENCOUNTERED AT GROUND LEVEL, THE FOUNDATION SHALL BE A MINIMUM OF 18 INCHES. WHEN SOLID ROCK IS ENCOUNTERED BELOW GROUND LEVEL, THE FOUNDATION SHALL EXTEND INTO THE SOLID ROCK A MINIMUM DEPTH OF 6 INCHES OR PROVIDE A MINIMUM FOUNDATION DEPTH OF 24 INCHES.
6. ONLY CONCRETE FOUNDATIONS SHALL BE USED IN ROCK.
7. ALL SIGNS SHALL BE MOUNTED ON TYPE U SUPPORTS AS DETAILED ON SHEET C5.2

SCALE : 1"=100'

0' 100'

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

SIGNING AND PAVEMENT MARKINGS

30 % SUBMITTAL	PROJECT NO.: 7256-06		DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD	SHEET NO.: X.XX OF X.XX

GENERAL NOTES

1.) THE EXISTING SIGNS LOCATED ON THE JOBSITE ARE THE PROPERTY OF THE CITY OF SAN ANTONIO. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO TRAFFIC OPERATIONS. THE ASSISTANT TRAFFIC SUPERINTENDENT (207-7765) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.

2.) AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS SECTION OF THE PUBLIC WORKS DEPARTMENT (207-7765) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER CITY SIGNS AND POLES.

3.) PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE TRAFFIC ENGINEERING (207-7720) CONSTRUCTION INSPECTION AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.

4.) ALL GROUND MOUNTED SIGNS SHALL USE HIGH INTENSITY REFLECTIVE SHEETING.

5.) ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.

6.) ALL BLANKS TO BE ALUMINUM ALLOY NO. 5052-H38.

7.) "T" DENOTES THICKNESS OF SIGN BLANKS.

8.) ALL HOLES SHALL BE 3 / 8" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND / OR ROUGH EDGES.

9.) SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL.

10.) ALL SIGN BLANK TO BE ETCHED, DEGREASED, AND HAVE AN ALODINE FINISH PRIOR TO APPLICATION OF LEGENDS.

11.) ALL DETAILS ARE NOT TO SCALE.

12.) ALL DIMENSIONS ARE IN INCHES.

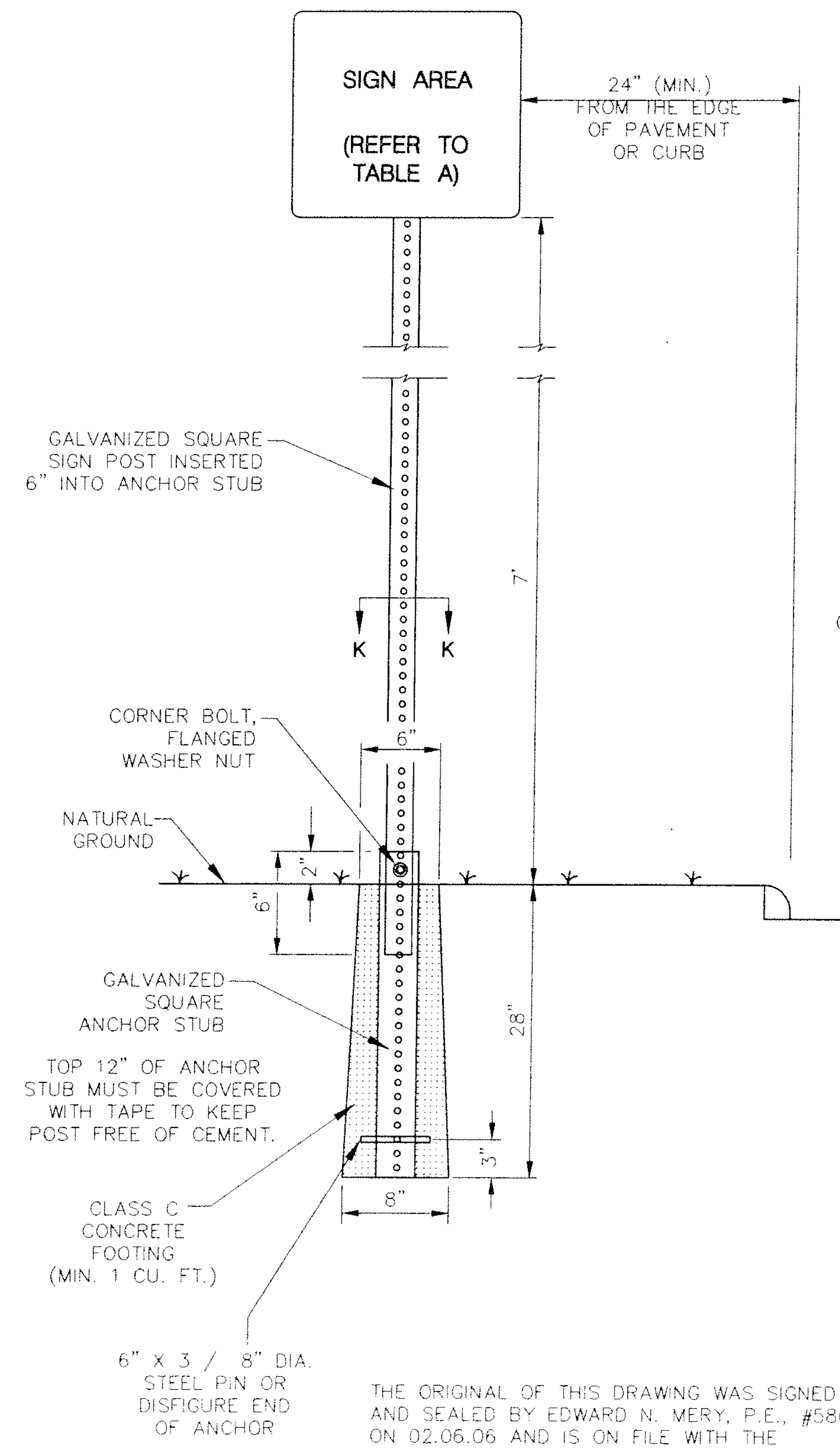
13.) ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND STANDARD HIGHWAY SIGNS (FHWA) LATEST EDITION.

14.) REINSTALLATION OF PREVIOUSLY EXISTING SIGNS, WHERE REQUIRED BY THE CITY TRAFFIC ENGINEER, SHALL BE AT THE CONTRACTOR'S EXPENSE.

TYPICAL GROUND SIGN INSTALLATION

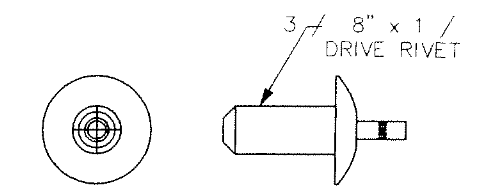
TYPE "U" MOUNT

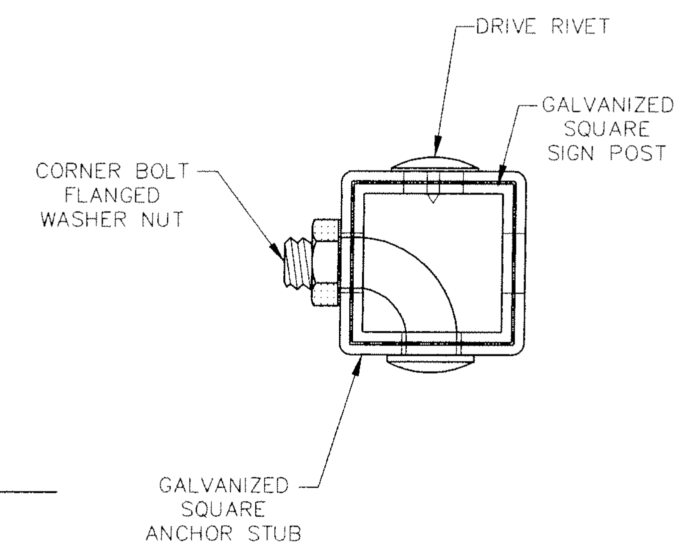
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



METAL TUBING	SIGN AREA	
	< 10 SQ. FT.	> 10 SQ. FT.
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3/4"x1-3/4" (14 GAUGE)	2"x2" (12 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED)	2"X2" (14 GAUGE)	2-1/4"x2-1/4" (14 GAUGE)

TABLE A





VIEW K-K

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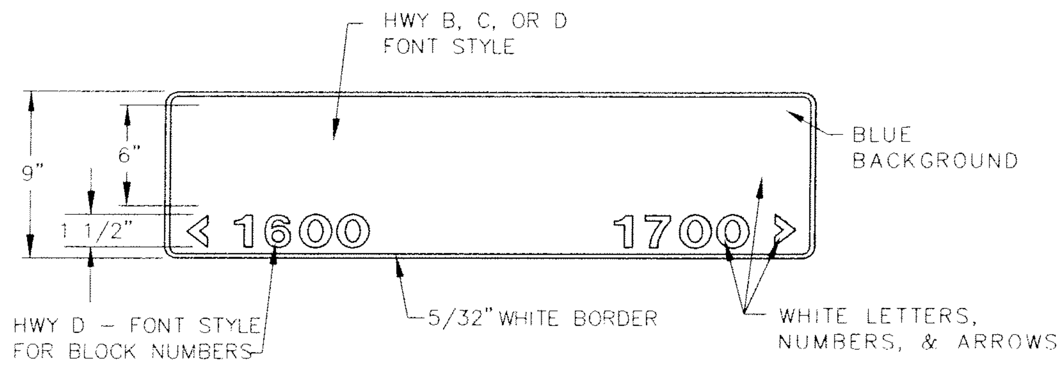
FEBRUARY 2006

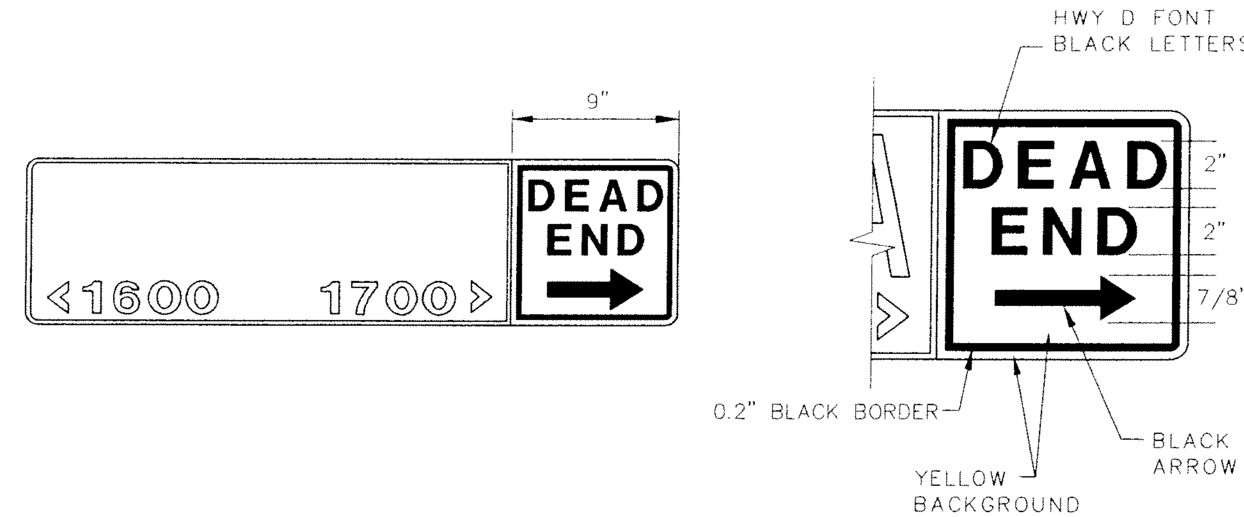
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS
GENERAL NOTES AND GROUND SIGN MOUNTING
SHEET 1 OF 4

% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: A.F.G.	DSGN. BY E.N.M.	CHKD. BY J.D.F. / E.N.M.	SHEET NO. 5.1



9" D3 - STREET NAME SIGN



NEW 9" D3 W / DEAD END OR NO OUTLET SIGNAGE

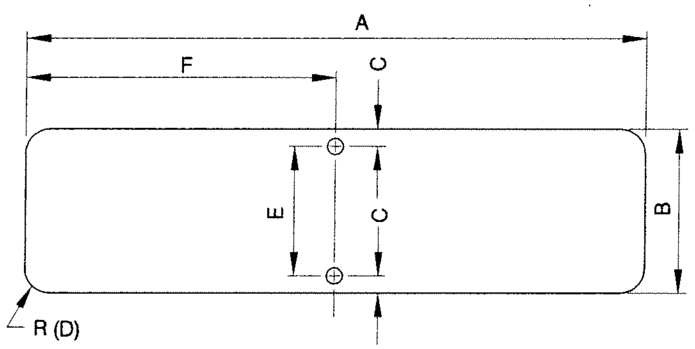
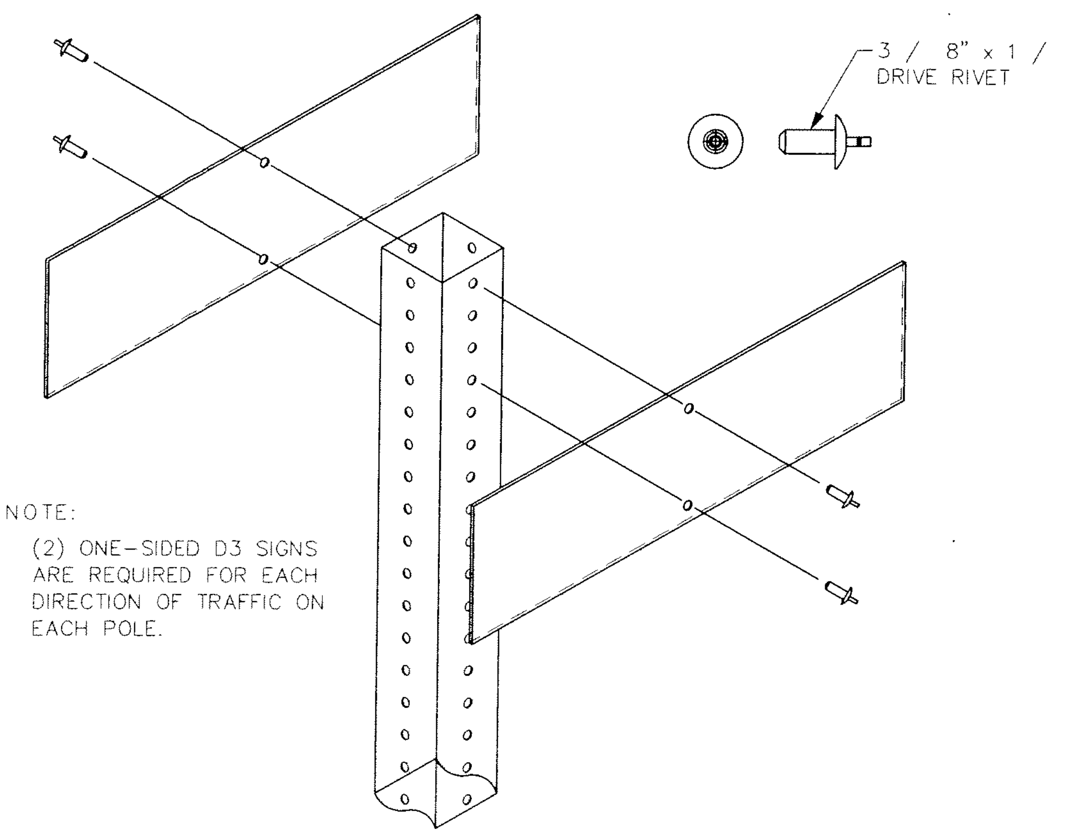


TABLE - D3 SIGNS

A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	8"	12"	0.125"
30"	9"	1/2"	3/4"	8"	15"	0.125"
36"	9"	1/2"	3/4"	8"	18"	0.125"
42"	9"	1/2"	3/4"	8"	21"	0.125"
48"	9"	1/2"	3/4"	8"	24"	0.125"
54"	9"	1/2"	3/4"	8"	27"	0.125"

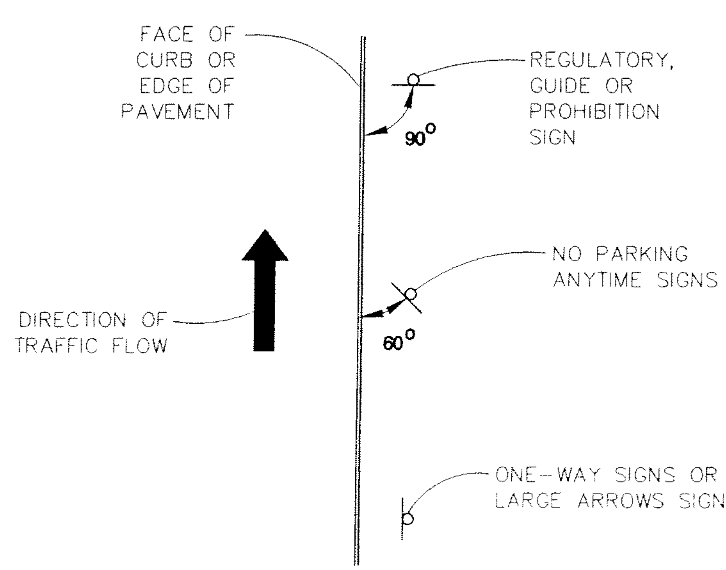
NOTE: A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "DEAD END" OR "NO OUTLET" SUPPLEMENT IS REQUIRED.



NOTE:
(2) ONE-SIDED D3 SIGNS ARE REQUIRED FOR EACH DIRECTION OF TRAFFIC ON EACH POLE.

D3 SIGN TO POLE INSTALLATION

HEIGHT	9" (228 mm)
LENGTH	24" (600 MM) MIN. 54 (1350 MM) MAX. 6" (150 MM) INCREMENTS OF LENGTH
THICKNESS	0.125" (3MM)
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209) GOLD CHROMATE FINISH
SIGN FACE MATERIALS	BLUE FILM OVER HIGH INTENSITY FP-85, SECTION 718 AND L-S-300C
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK, IF NECESSARY
COLOR	WHITE LEGEND ON BLUE BACKGROUND
LETTER TRACKING	10%



TYPICAL GROUND MOUNTED SIGN PLACEMENT

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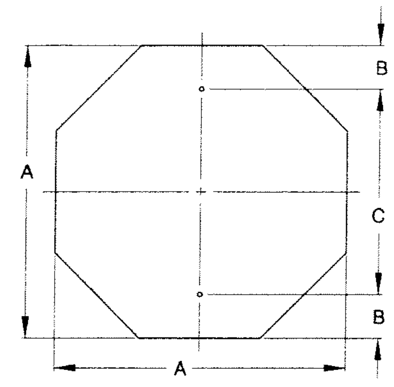
FEBRUARY 2006

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

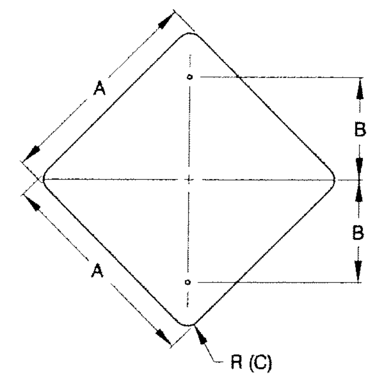
TRAFFIC SIGN STANDARDS
D3 STREET NAME SIGN AND SIGN MOUNTING
SHEET 2 OF 4

% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: A.F.G.	DSGN. BY E.N.M.	CHKD. BY J.D.F. / E.N.M.	SHEET NO. 5.2



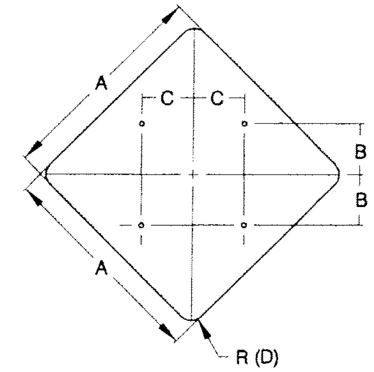
OCTAGONAL

A	B	C	T
24	3	18	0.080
30	3	24	0.080
36	3	30	0.100



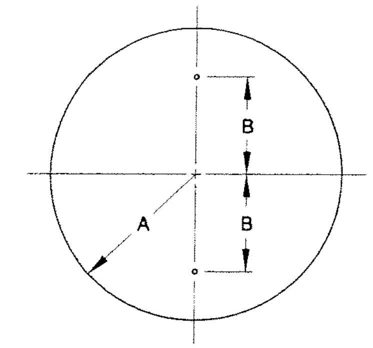
DIAMOND (A)

A	B	C	T
18	9	1½	0.080
24	12	1½	0.080
30	15	1⅞	0.080
36	18	2¼	0.100



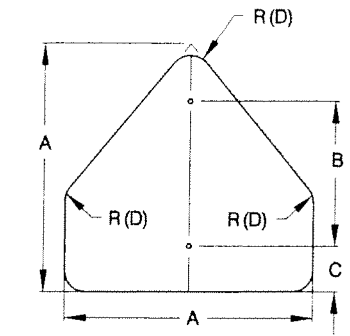
DIAMOND (B)

A	B	C	D	T
48	15	15	3	0.100



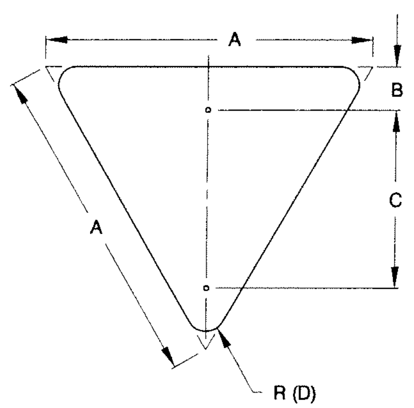
CIRCLE

A	B	T
18	15	0.100



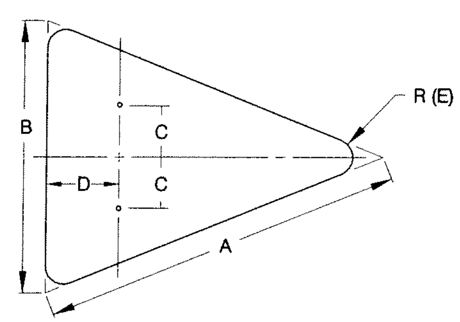
PENTAGON (SCHOOL)

A	B	C	D	T
36	24	32	1 /	0.100



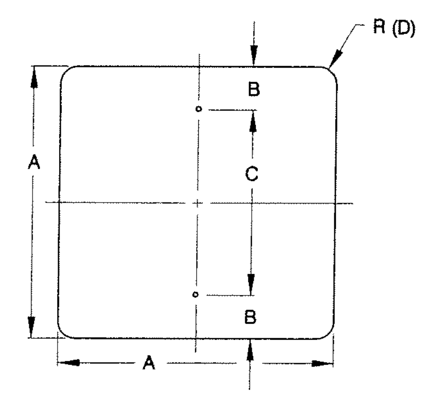
EQUILATERAL TRIANGLE

A	B	C	D	T
36	2	24	2	0.100



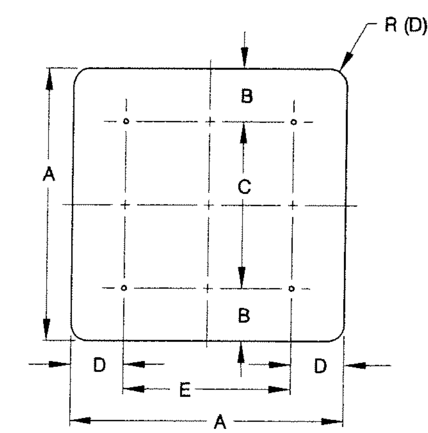
ISOSCELES TRIANGLE

A	B	C	D	E	T
40	30	7½	12	1⅞	0.100
48	36	9	15	2¼	0.100



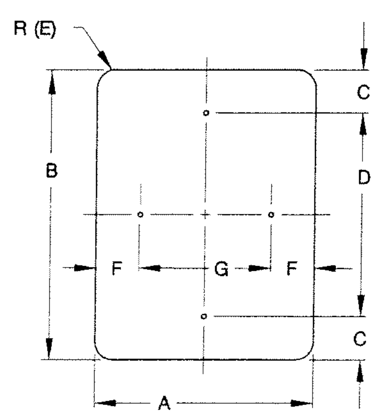
SQUARE (A)

A	B	C	D	T
18	1½	15	1½	0.080
24	3	18	1½	0.080
30	3	24	1⅞	0.080



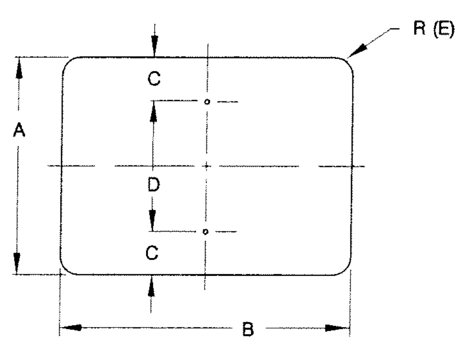
SQUARE (B)

A	B	C	D	E	F	T
48	6	36	9	30	3	0.100



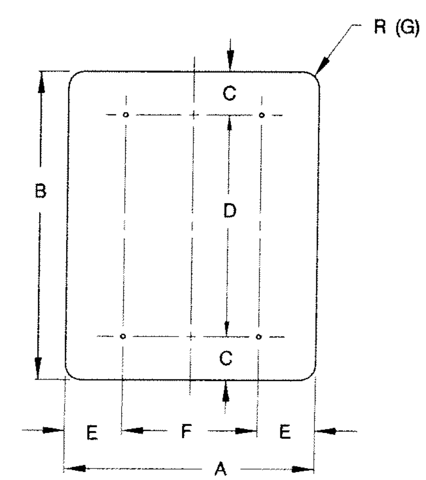
VERTICAL / HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
12	18	1 ½	15	1½	1½	9	0.080
12	36	3	30	1½	1½	9	0.080
18	24	1 ½	21	1½	1½	15	0.080
24	30	3	24	1½	3	18	0.080
24	36	3	30	1½	3	18	0.080
24	48	6	36	1⅞	3	18	0.080
30	36	3	30	1⅞	3	24	0.080



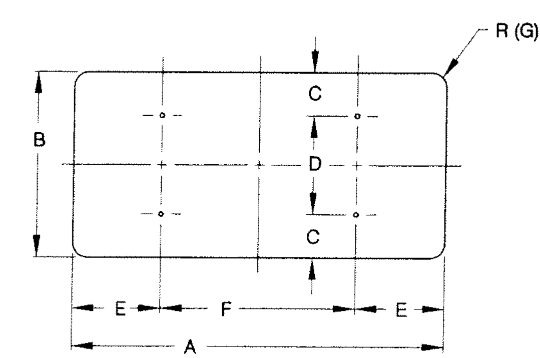
HORIZONTAL RECTANGLE

A	B	C	D	E	T
6	12	1	4	¼	0.080
6	18	1	4	¼	0.080
20	36	1½	17	1½	0.080



VERTICAL RECTANGLE

A	B	C	D	E	F	G	T
5	7 3/14	½	6 ¾	½	4	¼	0.100
48	60	6	48	9	30	3	0.100



HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
48	24	2	20	2	44	1 ⅞	0.100
48	36	3	30	3	42	2 ¼	0.100
60	24	2	20	2	56	1 ½	0.100
60	36	3	30	3	54	2 ¼	0.100
48	30	3	24	3	42	1 ⅞	0.100
60	30	3	24	3	54	1 ⅞	0.100

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FEBRUARY 2006

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

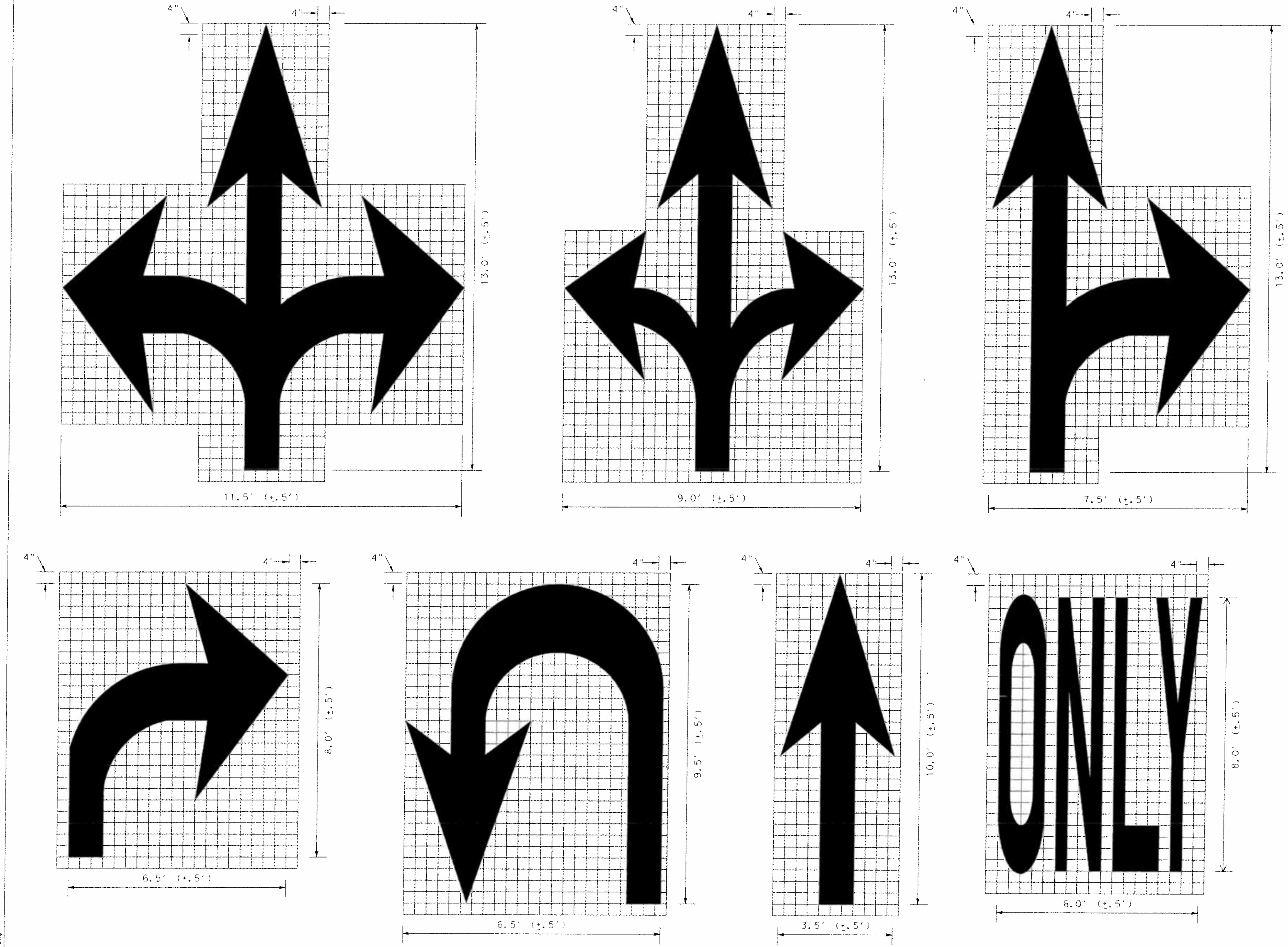
TRAFFIC SIGN STANDARDS

GROUND MOUNTED SIGN SIZES

SHEET 3 OF 4

% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: A.F.G.	DSGN. BY E.N.M.	CHKD. BY J.D.F. / E.N.M.	SHEET NO. 5.3

Date: Jul 14, 2011, 9:15am User ID: Mwright



NOTES:

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.

2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS.

3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET.

4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:

   A. REGULATORY
      STOP
      RIGHT (LEFT) TURN ONLY
      25 MPH
      SYMBOL ARROWS
   B. WARNING
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (SEE RCPM DETAIL)
      OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS

5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.

6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES.

7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

8. SPACING BETWEEN LETTERS SHOULD BE APPROXIMATELY 4 INCHES. THE WIDTH OF LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES.

9. LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED BY STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".

10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED ELSEWHERE IN THE PLANS.

SEPTEMBER 2009

CITY OF SAN ANTONIO

DEPARTMENT OF PUBLIC WORKS

TRAFFIC ENGINEERING STANDARDS

STANDARD PAVEMENT MARKINGS (ARROWS)

SHEET 3 OF 16

___% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO. 5.4

Date: Jul 14, 2011, 9:15am User ID: MWright
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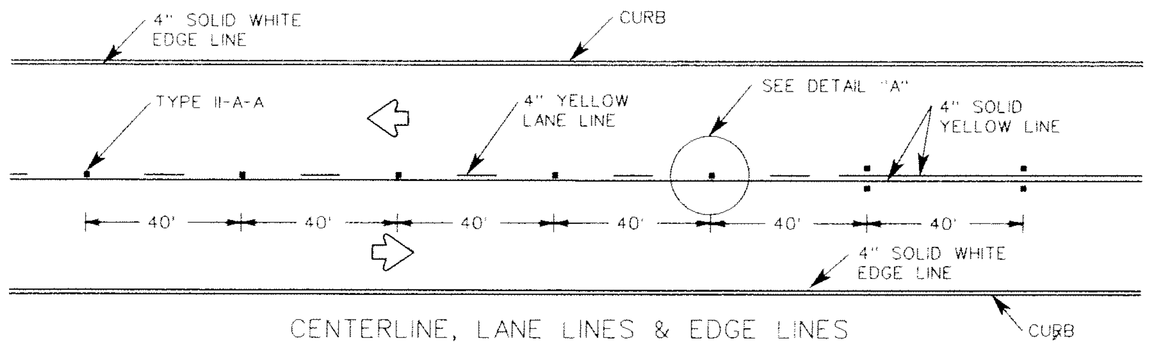
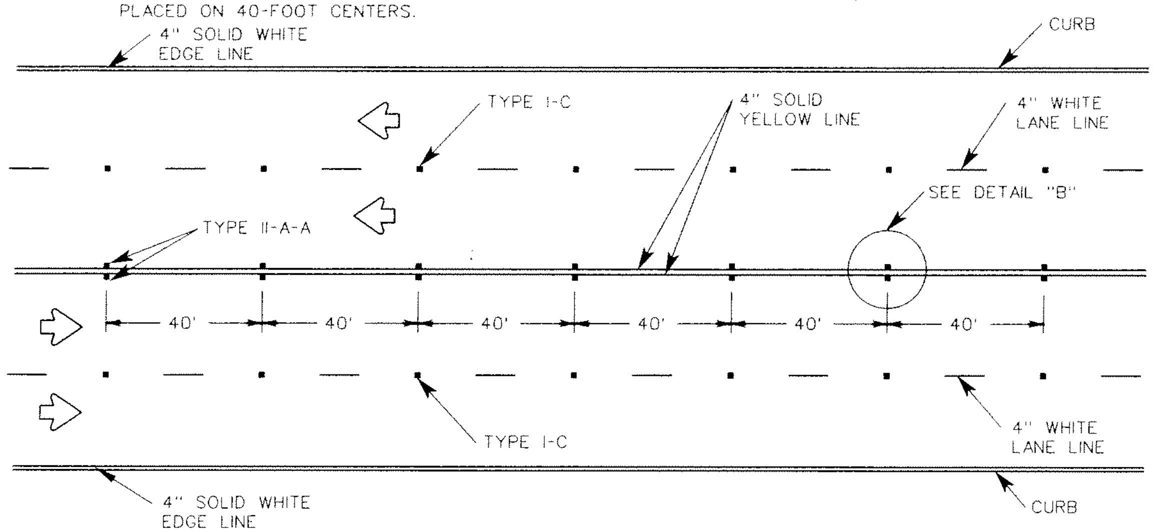
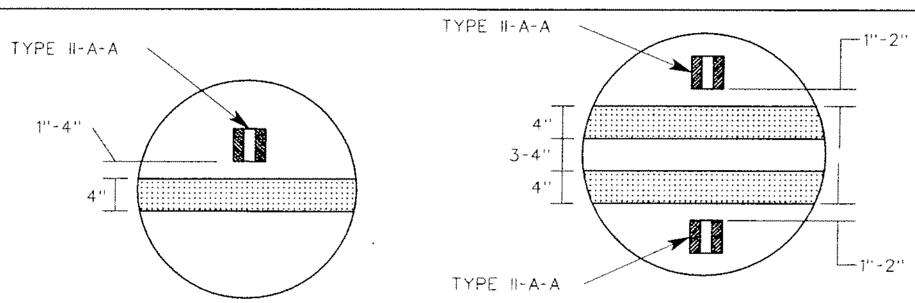
CENTERLINE & EDGE FOR ALL TWO LANE STREETS WITH PASSING ZONE



CENTERLINE, LANE LINES & EDGE LINES FOR FOUR LANE TWO-WAY STREETS

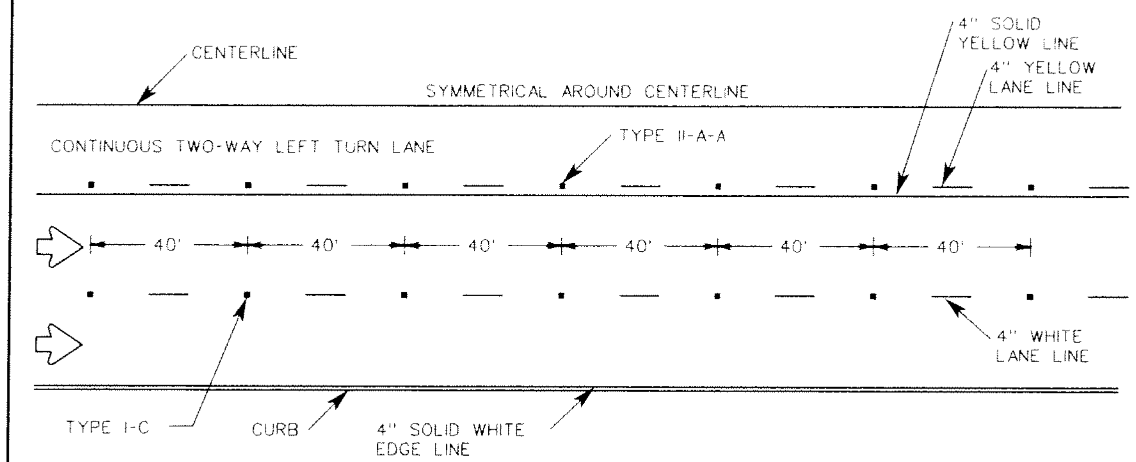
RAISED PAVEMENT MARKER TYPE I-C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.





DETAIL "A" DETAIL "B"

CENTERLINE, LANE LINES, & EDGE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES & EDGE LINES FOR ONE-WAY MULTILANE STREET

RAISED PAVEMENT MARKERS TYPE II-C-R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.

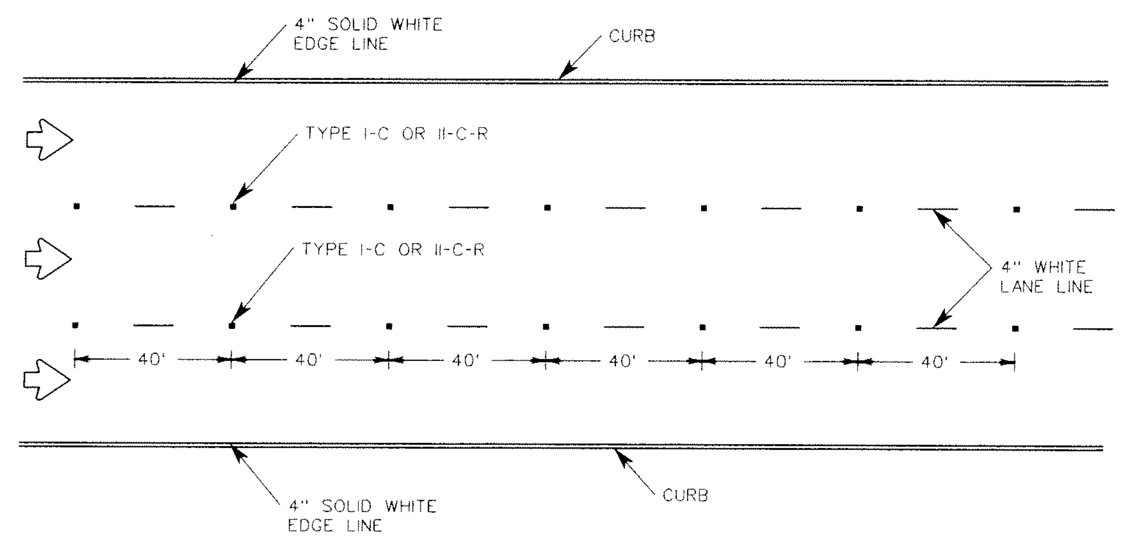


TABLE 1 - TYPICAL LENGTH (L)

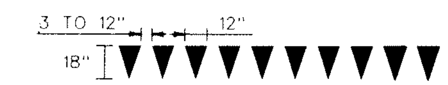
* POSTED SPEED	FORMULA
45>	$L = \frac{WS^2}{60}$
≥45	L= WS

* 85TH PERCENTILE SPEED MAY BE USED ON ROADS WHERE TRAFFIC SPEEDS NORMALLY EXCEED THE POSTED SPEED LIMIT. CROSSHATCHING LENGTH SHOULD BE ROUNDED UP TO NEAREST 5 FOOT INCREMENT.

L= LENGTH OF CROSSHATCHING (FT)
W= WIDTH OF OFFSET (FT)
S= POSTED SPEED (MPH)

EXAMPLES:
AN 8 FOOT SHOULDER IN ADVANCE OF A BRIDGE REDUCES TO 4 FEET ON A 70 MPH ROADWAY. THE LENGTH OF THE CROSS-HATCHING SHOULD BE:
L=8X70=560 FT
A 4 FOOT SHOULDER IN ADVANCE OF A BRIDGE REDUCES TO 2 FEET ON A 40 MPH ROADWAY. THE LENGTH OF THE CROSS-HATCHING SHOULD BE:
$L = 4(40)^2 / 60 = 106.67$ FT ROUNDED TO 110 FT

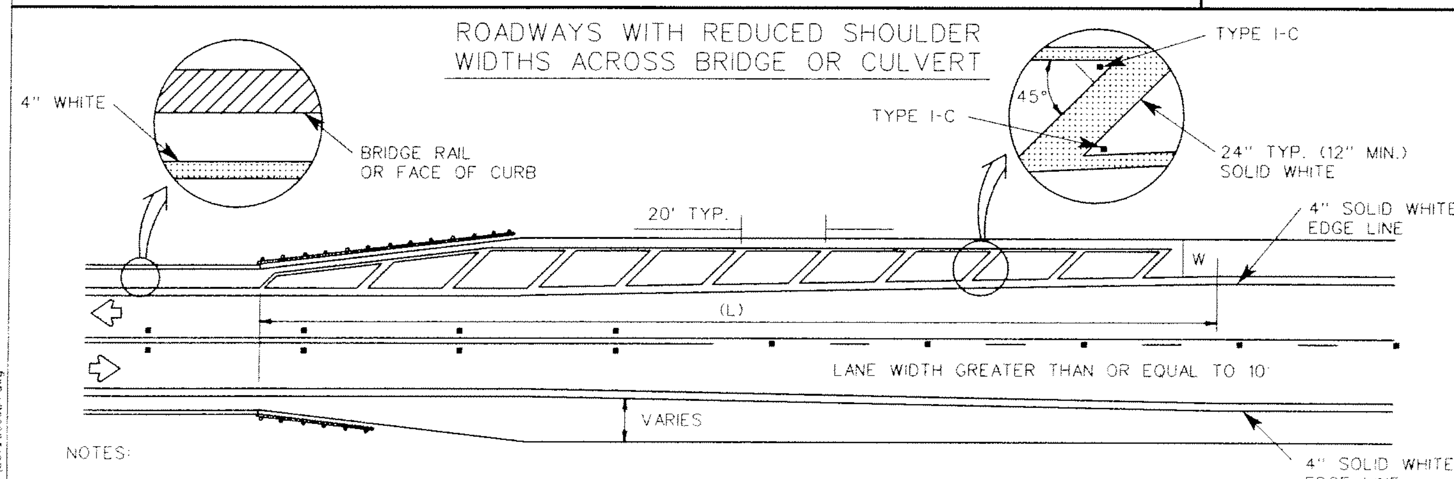
YIELD LINES



GENERAL NOTES:

1. EDGELINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF SAN ANTONIO STANDARD SPECIFICATIONS.
6. 4" SOLID WHITE EDGE LINES ARE OPTIONAL AS DIRECTED BY THE CITY TRAFFIC ENGINEER.

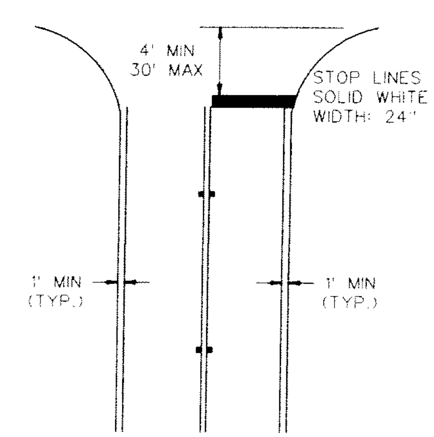
ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT



NOTES:

1. NO-PASSING ZONE ON BRIDGE APPROACH IS OPTIONAL BUT IF USED, IT SHALL BE A MINIMUM 500 FEET LONG.
2. FOR CROSSHATCHING LENGTH (L) SEE TABLE 1.
3. THE WIDTH OF THE OFFSET (W) AND THE REQUIRED CROSSHATCHING WIDTH IS THE FULL SHOULDER WIDTH IN ADVANCE OF THE BRIDGE.
4. THE CROSSHATCHING SHOULD BE REQUIRED IF THE SHOULDER WIDTH IN ADVANCE OF THE BRIDGE IS 4 FOOT OR WIDER AND ANY REDUCTION IN SHOULDER WIDTH ACROSS THE BRIDGE OCCURS.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE



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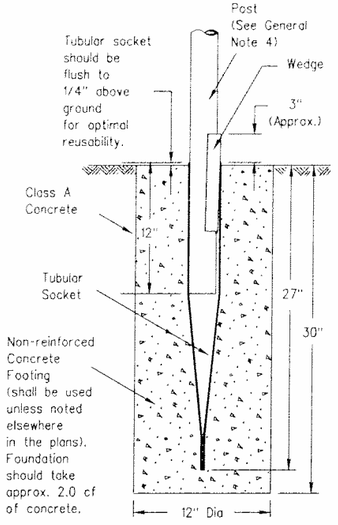
SEPTEMBER 2009

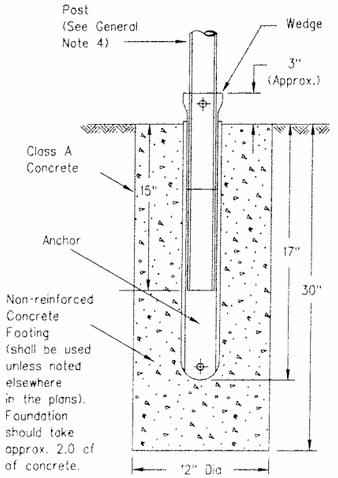
CITY OF SAN ANTONIO			
DEPARTMENT OF PUBLIC WORKS			
TRAFFIC ENGINEERING STANDARDS STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE 1 SHEET 4 OF 16			
% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: LAN	DSGN. BY: C.R.V.	CHKD. BY: M.E.	SHEET NO. 5.5

Wedge Anchor Steel System



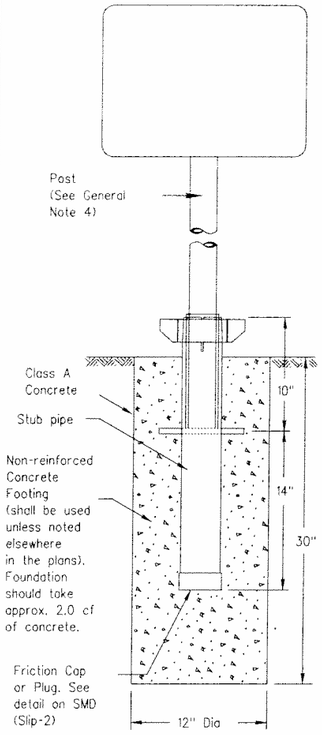
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

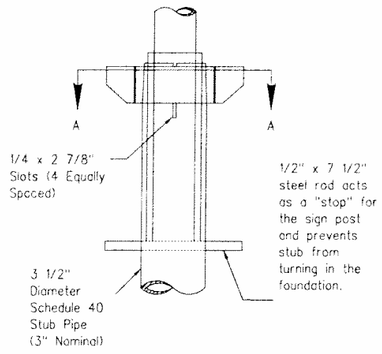


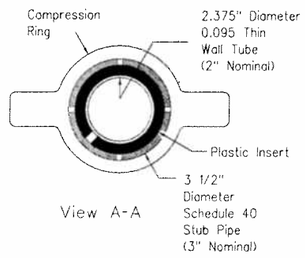
SMD RD SGN ASSM TY TWT(X)WP(X)

Universal Anchor System with Thin-Walled Tubing Post



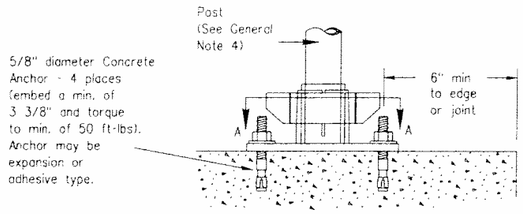
SM RD SGN ASSM TY TWT(X)UA(P)



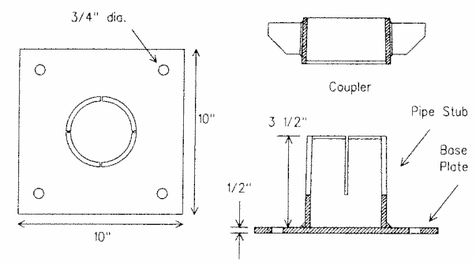


View A-A

Plastic insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.

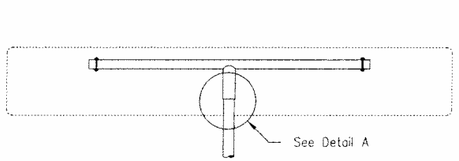


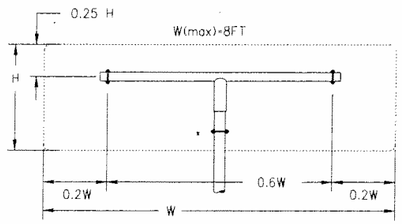
Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.



SM RD SGN ASSM TY TWT(X)UB(P)

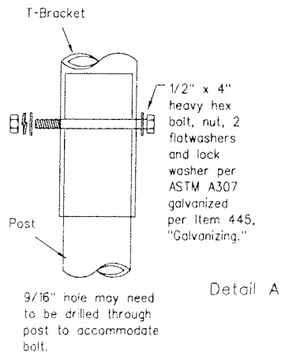
Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post





SM RD SGN ASSM TY TWT(X)XX(T)

(x - See General Note 6)



9/16" hole may need to be drilled through post to accommodate bolt.

Detail A

NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer_list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TWT)-08

DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY	SHEET NO.
			5.6

26E

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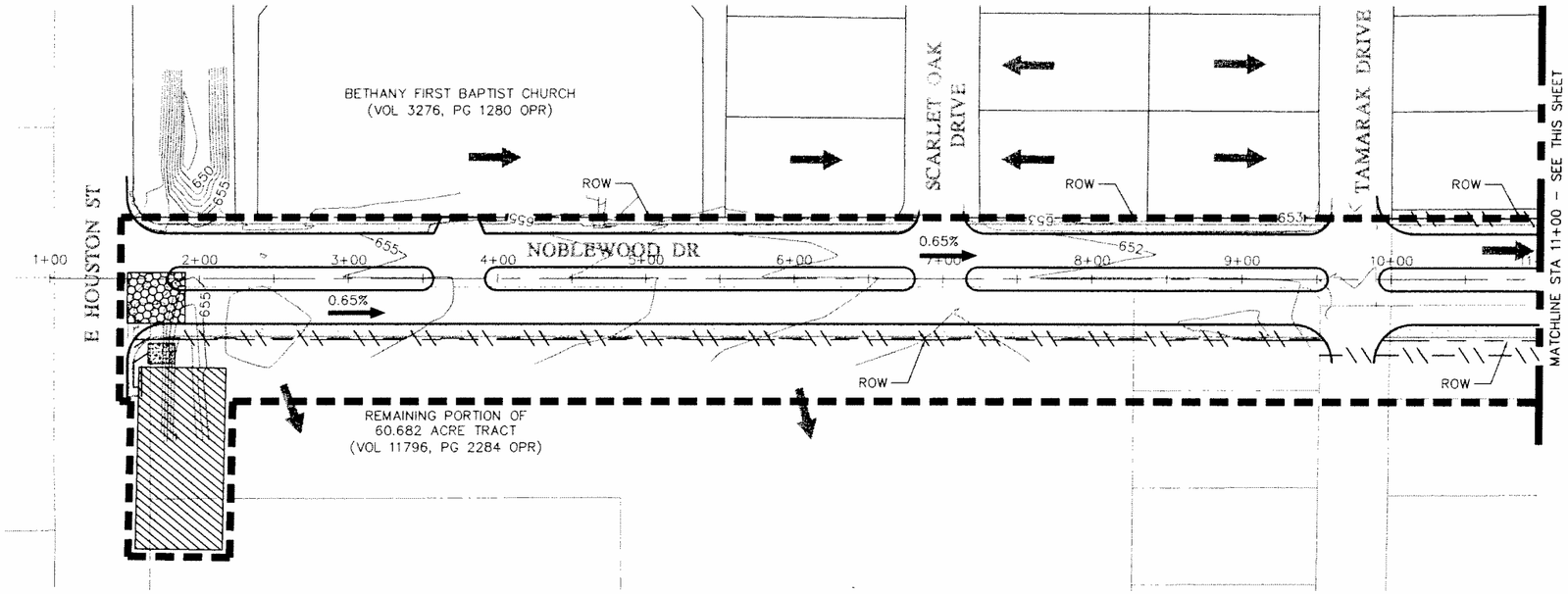
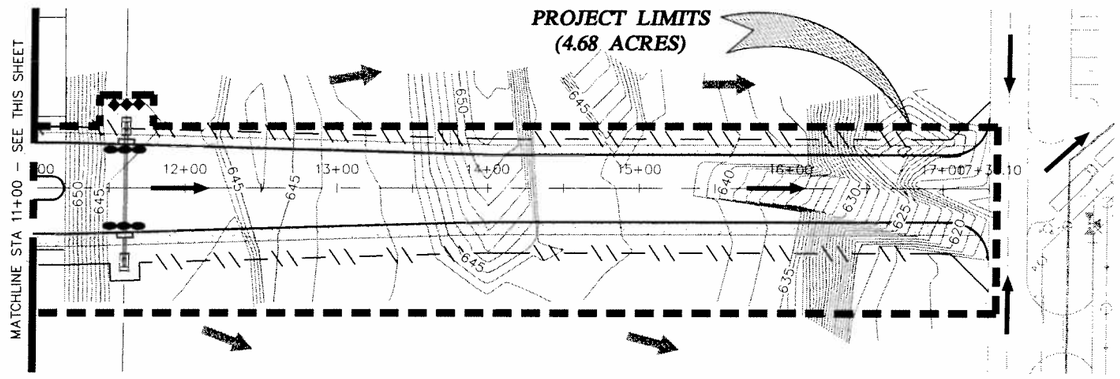




LEGEND

- RIGHT-OF-WAY
- EXISTING GRADE
- 970 — PROPOSED GRADE
- PROJECT LIMITS
- TEMPORARY SEDIMENT CONTROL FENCE
- FLOW ARROW (PROPOSED)
- FLOW ARROW (EXISTING)
- CURB INLET GRAVEL FILTERS
- ROCK FILTER DAMS
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)
- CONSTRUCTION EQUIPMENT, VEHICLE AND MATERIALS STORAGE AREA. (FIELD LOCATE)
- CONCRETE TRUCK WASHOUT PIT (FIELD LOCATE)

GENERAL NOTES

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.

7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.

8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT & EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.

SCALE : 1"=100'

0' 100'

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

STORMWATER POLLUTION PREVENTION PLAN

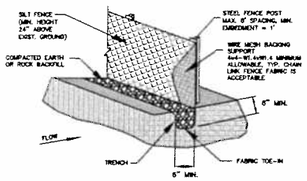
30 % SUBMITTAL	PROJECT NO.: 7256-06	DATE: JULY 2011
DRWN. BY: MW	DSGN. BY: TD CHKD. BY: BD	SHEET NO.: X.XX OF X.XX

SILT FENCE

SILT FENCE
A silt fence is a barrier consisting of geotextile fabric supported by metal posts to prevent soil and sediment loss from a site. When properly used, silt fences can be highly effective at controlling sediment from disturbed areas. They cause runoff to pond, allowing heavier solids to settle out. If not properly installed, silt fences are not likely to be effective.

The purpose of a silt fence is to intercept and detain water-born sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.



ISOMETRIC PLAN VIEW

N.T.S.

Schematic of a Silt Fence Installation (NCTCOG, 1993b)

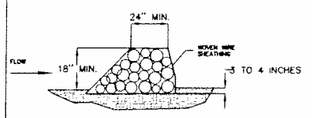
MATERIALS:
(1) Silt fence material should be polypropylene, polyethylene, or polyamide woven or nonwoven fabric. The fabric should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. sieve No.30
(2) Fence posts should be made of hot rolled steel, at least 4 feet long with tee or Y-bar cross section, surface painted or galvanized, minimum weight 1.25 lb/ft, and brindell hardness exceeding 140.
(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum

INSTALLATION.
(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Posts must be embedded a minimum of 1-foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.
(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.
(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.
(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
(5) Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence post. There should be a 3-foot overlap, securely fastened where ends of fabric meet.
(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

COMMON TROUBLE POINTS:
(1) Fence not installed along the contour causing water to concentrate and flow over the fence.
(2) Fabric not seated securely to ground (runoff passing under fence).
(3) Fence not installed perpendicular to flow line (runoff escaping around sides).
(4) Fence treating too large an area, or excessive channel flow (runoff overtops or collapses fence).

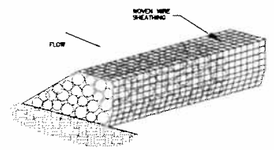
INSPECTION AND MAINTENANCE GUIDELINES.
(1) Inspect all fencing weekly, and after rainfall.
(2) Remove sediment when buildup reaches 6 inches.
(3) Replace torn fabric or install a second line of fencing parallel to the torn section.
(4) Replace or repair sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
(5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

SILT FENCE



CROSS SECTION

N.T.S.



ISOMETRIC PLAN VIEW

N.T.S.

Schematic Diagram of a Rock Berm (NCTCOG, 1993)

ROCK BERMS
The purpose of a rock berm is to serve as a check dam in areas of concentrated flow, to intercept sediment-laden runoff, detain the sediment and release the water in sheet flow. The rock berm should be used when the contributing drainage area is less than 5 acres. Rock berms are used in areas where the volume of runoff is too great for a silt fence to contain. They are less effective for sediment removal than silt fences, particularly for fine particles, but are able to withstand higher flows than a silt fence. As such, rock berms are often used in areas of channel flows (ditches, gullies, etc.). Rock berms are most effective at reducing bed load in channels and should not be substituted for other erosion and sediment control measures farther up the watershed.

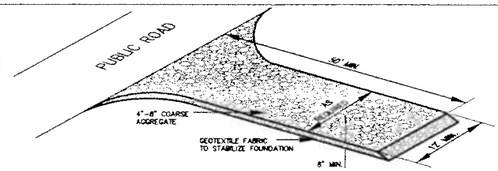
MATERIALS.
(1) The berm structure should be secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoot rings.
(2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

INSTALLATION
(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.
(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.
(3) Place the rock along the sheathing as shown in the diagram to a height not less than 18".
(4) Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, and the berm retains its shape when walked upon.
(5) Berm should be built along the contour at zero percent grade or as near as possible.
(6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

COMMON TROUBLE POINTS.
(1) Insufficient berm height or length (runoff quickly escapes over the top or around the sides of berm).
(2) Berm not installed perpendicular to flow line (runoff escaping around one side).

INSPECTION AND MAINTENANCE GUIDELINES.
(1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
(2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
(3) Repair any loose wire sheathing.
(4) The berm should be reshaped as needed during inspection.
(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

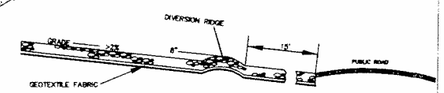
ROCK BERM



SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT

MATERIALS.
(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
(2) The aggregate should be placed with a minimum thickness of 8 inches.
(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd², a mullen burst rating of 140 lb/in², and an equivalent opening size greater than a number 50 sieve.
(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rock should be included in the plans. Divert wastewater to a sediment trap or basin.

INSTALLATION.
(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
(3) The construction entrance should be at least 50 feet long.
(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
(8) Install pipe under pad as needed to maintain proper public road drainage.

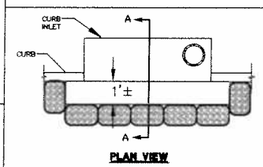


CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT

COMMON TROUBLE POINTS.
(1) Inadequate runoff control-sediment washes onto public road.
(2) Stone too small or geotextile fabric absent, results in muddy condition as stone is pressed into soil.
(3) Pad too short for heavy construction traffic-extend pad beyond the minimum 50 foot length as necessary.
(4) Pad not flared sufficiently at road surface, results in mud being tracked on to road and possible damage to road.
(5) Unstable foundation – use geotextile fabric under pad and/or improve foundation drainage.

INSPECTION AND MAINTENANCE GUIDELINES.
(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

STABILIZED CONSTRUCTION ENTRANCE/EXIT

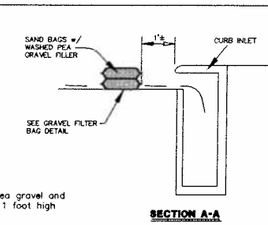


PLAN VIEW

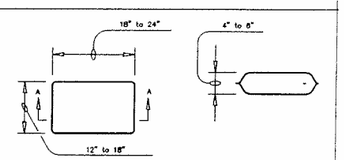
GENERAL NOTES.
1) The sandbags should be filled with washed pea gravel and stacked to form a continuous barrier about 1 foot high around inlets.
2) The bags should be tightly abutted against each other to prevent runoff from flowing between the bags.

INSPECTION AND MAINTENANCE GUIDELINES.
1) Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
2) Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a matter that it will not erode.
3) Check placement of device to prevent gaps between device and curb.
4) Inspect filter fabric and patch or replace if torn or missing.
5) Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

BAGGED GRAVEL CURB INLET PROTECTION



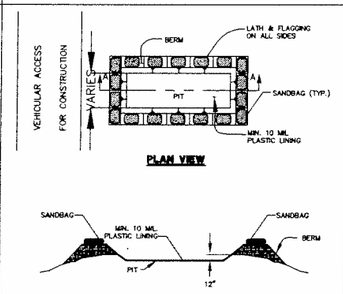
SECTION A-A



PLAN VIEW SECTION A-A

- The filter bag material shall be made of polypropylene, polyethylene or polyamide woven fabric, min. unit weight of 4 ounces/sy, have a Mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70%.
- The filter bag shall be filled with clean, medium (washed pea gravel) to coarse gravel (0.31 to 0.75 inch diameter).
- Sand shall NOT be used to fill the filter bags.

GRAVEL FILTER BAG DETAIL



PLAN VIEW

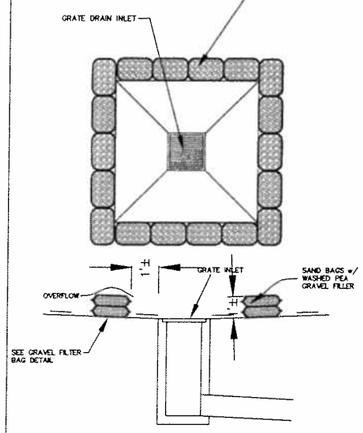
SECTION A-A

GENERAL NOTES.
- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.
- Washout pit shall be located in an area easily accessible to construction traffic.
- Washout pit shall not be located in areas subject to inundation from storm water runoff.
- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies.
- Temporary concrete washout facility should be constructed with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.

MATERIALS.
- Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

MAINTENANCE.
- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of.
- Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of.
- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

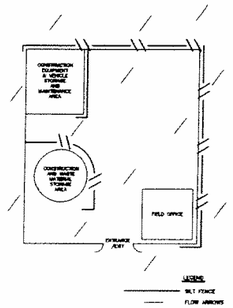
CONCRETE TRUCK WASHOUT PIT



GENERAL NOTES.
1) The sandbags should be filled with washed pea gravel and stacked to form a continuous barrier about 1 foot high around inlets.
2) The bags should be tightly abutted against each other to prevent runoff from flowing between the bags.

INSPECTION AND MAINTENANCE GUIDELINES.
1) Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
2) Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a matter that it will not erode.
3) Check placement of device to prevent gaps between device and curb.
4) Inspect filter fabric and patch or replace if torn or missing.
5) Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

BAGGED GRAVEL GRATE INLET PROTECTION



CONSTRUCTION STAGING AREA

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

NOBLEWOOD DR. STREET EXPANSION

STORMWATER POLLUTION PREVENTION PLAN DETAILS

30 % SUBMITTAL	PROJECT NO.:	7258-06		DATE:	JULY 2011
DRWN. BY: MW	DSGN. BY: TD	CHKD. BY: JD		SHEET NO.:	XXX OF XXX

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 3

Date: Jul 14, 2011, 9:15am User ID: MWright
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