

CONSTRUCTION PLANS FOR

SERVICE CENTER PARKING IMPROVEMENTS

APPROVED FOR CONSTRUCTION

MAY 2 6 2009

City of Rockwall Engineering Dept. City Engineer:

MAYOR

Bill Cecil

MAYOR PRO-TEM

Cliff Sevier

CITY COUNCIL

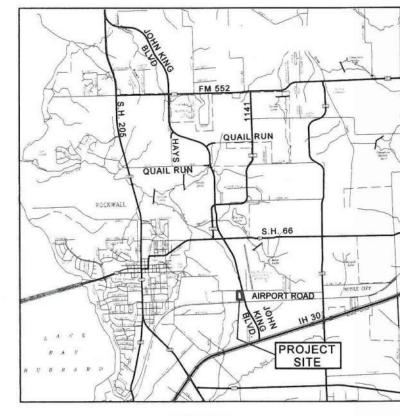
David Sweet Mark Russo Glen Farris Mathew R. Scott Margo Nielsen

CITY MANAGER

Julie Couch

CITY ENGINEER
Chuck Todd

APRIL 2009



SCALE: N.T.S.

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* THE STANDARD DETAIL SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

THEODORE H. GAERTNER, P.E. #37/24





AECOM

AECOM USA GROUP, INC. 17300 DALLAS PARKWAY, SUITE 1010 DALLAS, TEXAS 75248 WWW. AECOM. COM TBPE REG. NO. F-3082 口口

GENERAL

- I. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE CITY OF ROCKWALL WHICH ADOPTED THE STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL, TEXAS, (COG), 3RD ADDITION WITH CITY AMENDMENTS. COPIES MAY BE OBTAINED FROM THE "NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS", 616 SIX FLAGS DR., P.O. BOX 5888, ARLINGTON, TEXAS 76005-5888, PH (817) 640-3300.
- 2. THESE PLANS, PREPARED BY AECOM USA GROUP, INC.
 (AECOM). DO NOT EXTEND TO OR INCLUDE DESIGNS
 OR SYSTEMS PERTAINING TO THE SAFETY OF THE
 CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES,
 AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE
 OF THE WORK. THE SEAL OF AECOM'S REGISTERED
 PROFESSIONAL ENGINEER(S) HEREON DOES NOT
 EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY
 NOW OR HEREAFTER BE INCORPORATED IN THE WORK.
 THE CONSTRUCTION CONTRACTOR IS TO PREPARE
 OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS,
 INCLUDING THE PLANS AND SPECIFICATIONS.
- 3. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS GOVERNING EXCAVATION, TRENCH SIDE SLOPES SHALL MEET OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS THAT ARE IN EFFECT AT THE TIME OF CONSTRUCTION, SHEETING, SHORING, AND BRACING WILL BE REQUIRED WHEN SIDE SLOPE STANDARDS ARE NOT MET. A TRENCH PULL BOX, MEETING OSHA STANDARDS, WILL BE ACCEPTABLE. THE APPARENT LOW BIDDER WILL SUBMIT DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS WHEN TRENCH EXCAVATION WILL EXCEED A DEPTH OF FIVE (5) FEET THAT MEET OSHA STANDARDS THAT ARE IN EFFECT AT THE TIME OF CONSTRUCTION
- 4. ALL CONSTRUCTION OPERATIONS ARE TO BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE OSHA, COPIES OF OSHA STANDARDS
 MAY BE PURCHASED FROM THE U.S. GOVERNMENT
 PRINTING OFFICE; INFORMATION AND RELATED
 REFERENCE MATERIALS MAY BE OBTAINED FROM
 OSHA, 903 SAN JACINTO, AUSTIN, TEXAS.
- 5. THE CONTRACTOR SHALL OBTAIN ALL CONSTRUCTION PERMITS REQUIRED FROM THE CITY OF ROCKWALL PRIOR TO COMMENCEMENT OF WORK, NO EXTRA PAY LITEM.
- THE CITY OF ROCKWALL IS TO BE NOTIFIED BY TELEPHONE (972-771-7746) AT LEAST 48 HOURS IN ADVANCE OF ALL CONSTRUCTION, FOLLOWED BY A LETTER OF CONFIRMATION.
- 7. THE CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY THESE OPERATIONS PRIOR TO COMMENCEMENT OF WORK, NO EXTRA PAY ITEM.
- B. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY OMISSIONS. DISCREPANCIES, OR DIMENSIONAL ERRORS PRIOR TO BEGINNING OR FABRICATING ANY WORK OR MATERIALS. OTHERWISE THE CORRECTIONS (AND ASSOCIATED COST) WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO EXTRA PAY ITEM.
- 9. THE CONTRACTOR IS TO TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THESE CONSTRUCTION OPERATIONS ARE TO BE REPAIRED IMMEDIATELY BY THE CONTRACTOR TO AT LEAST THE PRE-EXISTING CONDITION AT THE CONTRACTOR'S EXPENSE.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-PAIRING ANY DAMAGE CAUSED BY THESE CONSTRUC-TION OPERATIONS OUTSIDE THE DESIGNATED WORK AREA WITH EQUAL OR BETTER QUALITY MATERIAL AT THE CONTRACTOR'S EXPENSE.

GENERAL CONSTRUCTION NOTES

- II. ALL EXISTING MONUMENTS, PROPERTY PINS OR IRON RODS SHALL BE PRESERVED BY THE CONTRACTOR. IF ANY OF THESE ITEMS NEEDS TO BE REMOVED OR DISRUPTED TO ACCOMMODATE CONSTRUCTION, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR REPLACING IT BACK TO ITS ORIGINAL LOCATION AND/OR ELEVATION AT THE CONTRACTOR'S EXPENSE.
- 12. NO TREES SHALL BE CUT OR REMOVED EXCEPT ON SPECIFIC APPROVAL BY THE CITY OF ROCKWALL. ANY TREES THAT ARE APPROVED FOR REMOVAL MUST BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES THAT ARE TO BE PRESERVED. NO EXTRA PAY ITEM.
- 13. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF STUMPS, ROOTS, AND VEGETATION FROM THE PROJECT SITE, NO EXTRA PAY ITEM.
- 14. ALL TREES. BUSHES, AND BRUSH THAT MUST BE REMOVED IN ORDER TO PROCEED WITH CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NOT MEASURED SEPARATELY FOR PAYMENT.
- 15. VEGETATION MUST BE PRUNED TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND
 EQUIPMENT BEFORE DAMAGE OCCURS (RIPPING OF
 BRANCHES, ETC.). ALL FINISHED PRUNING IS TO
 BE DONE ACCORDING TO RECOGNIZED, APPROVED
 STANDARDS OF THE INDUSTRY (REFER TO THE "NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS
 FOR SHADE TREES"). NO EXTRA PAY ITEM.
- 16. THE CONTRACTOR IS TO COMPLY WITH ALL APPLICA-BLE LOCAL, STATE, AND FEDERAL REQUIREMENTS REGARDING EXCESS AND WASTE MATERIAL, INCLUDING METHODS OF HANDLING AND DISPOSAL.
- 17. THE LOCATION FOR THE DISPOSAL OF CONSTRUCTION MATERIAL SHALL BE APPROVED BY THE CITY OF ROCKWALL DEPARTMENT OF ENGINEERING AND PUBLIC WORKS PRIOR TO THE START OF CONSTRUCTION.
- IB. MATERIAL MAY NOT BE STOCKPILED WITHIN THE 100-YEAR FLOODPLAIN.
- 19. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CON-TAMINATED SOIL RESULTING FROM AN ACCIDENTAL SPILL IS TO BE REMOVED AND DISPOSED OF PROPERLY AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION

- I. THE CONTRACTOR SHALL NOTIFY THE CITY OF ROCKWALL DEPARTMENT OF ENGINEERING AND PUBLIC WORKS BY TELEPHONE (972-771-7746) AT LEAST 48 HOURS IN ADVANCE FOR ALL WATER OR WASTEWATER MODIFICATIONS, LOCATES, OR TURNOFFS.
- 2. ONLY THE CITY OF ROCKWALL WATER DEPARTMENT SHALL OPERATE EXISTING WATER VALVES. CONTACT THE WATER DEPARTMENT AT 972-771-7730 FOR ASSISTANCE AT LEAST 24 HOURS IN ADVANCE (EXCEPT IN THE CASE OF AN EMERGENCY).
- FIELD ADJUSTMENTS MAY BE NECESSARY AND SHALL BE CARRIED OUT AS DIRECTED BY THE ENGINEER AT NO EXTRA PAY.
- 4. A MINIMUM OF 48 INCHES OF COVER IS REQUIRED OVER ALL UTILITY LINES. NO EXTRA PAY ITEM. THE CONTRACTOR SHALL USE CITY STANDARD DRAWING 3030 FOR CLASS B-3 PIPE EMBEDMENT, UNLESS OTHERWISE SHOWN IN PLANS.
- 5. COMPACTION OF BACKFILL MATERIAL BY FLOODING OR JETTING WILL NOT BE PERMITTED.
- THE CONTRACTOR MUST OBTAIN A CONSTRUCTION METER THROUGH THE CITY OF ROCKWALL AND PAY FOR THE WATER USED FOR DUST CONTROL AND CONCRETE BATCH PLANT, NO EXTRA PAY ITEM.
- 7. THROUGHOUT THE CONSTRUCTION, AND AT THE COM-PLETION OF CONSTRUCTION, THE CONTRACTOR IS TO ASSURE THAT DRAINAGE OF STORMWATER RUNOFF IS NOT BLOCKED. THE CONTRACTOR IS TO LEVEL WASHES. RUTS, DEPRESSIONS, AND MOUNDS TO GIVE THE AREA A SMOOTH FINISH. NO EXTRA PAY ITEM.
- 8. THE CONTRACTOR IS TO MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES ARE TO BE COORDINATED WITH THE OWNER, OWNER'S REPRESENTATIVE, AND THE CITY OF ROCKWALL, NO EXTRA PAY ITEM.

- 9. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING IRRIGATION SYSTEMS WITH NEW MATERIALS. IRRIGATION HEADS. VALVES, AND METERS MAY BE TEMPORARILY REMOVED TO ALLOW FOR CONSTRUCTION OF THE PROJECT. IRRIGATION HEADS, VALVES, AND METERS SHALL BE REPLACED IN THE SAME LOCATION AND IN WORKING ORDER, NO EXTRA PAY ITEM.
- IG. THE CONTRACTOR MUST NOTIFY EACH PROPERTY OWNER AND THE CITY 24 HOURS PRIOR TO SHUTTING OFF WATER FOR CONNECTION TO NEW MAIN.
- THE CONTRACTOR SHALL MAINTAIN THE EXISTING WATER MAINS IN SERVICE DURING ALL PHASES OF CONSTRUCTION AT NO EXTRA PAY. LEAKS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S
- 12. ALL SALVAGEABLE MATERIALS (VALVES, FIRE HYDRANTS, VALVE BOXES, ETC.) SHALL BE DELIVERED TO THE CITY OF ROCKWALL PUBLIC WORKS YARD. ALL NON-SALVAGEABLE MATERIALS TO BECOME PROPERTY OF THE CONTRACTOR AND TO BE DISPOSED OF OFFSITE.
- 13. THE MAXIMUM DEFLECTION OF PIPE JOINTS SHALL NOT EXCEED THAT RECOMMENDED BY THE PIPE MANUFACTURER. IF IT IS NECESSARY TO DEFLECT THE PIPE GREATER THAN THE RECOMMENDED AMOUNT. THE CONTRACTOR SHALL PROVIDE FITTINGS. THERE SHALL BE NO ADDITIONAL COMPENSATION ALLOWED.
- 14. THE CONTRACTOR SHALL INSTALL BLUE ELECTRONIC MARKER SYSTEM (EMS) LOCATOR PADS ALONG THE WATER LINE EVERY 250". AT VALVES, AT CHANGES IN DIRECTION, AND AT SERVICES. NO EXTRA PAY ITEM.
- 15. ALL AREAS DISTURBED BY CONTRACTOR SHALL BE RESTORED TO THE SAME OR BETTER CONDITION THAN BEFORE START OF CONSTRUCTION.
- I6. CONCRETE TESTING SHALL BE PERFORMED PER CITY OF ROCKWALL STANDARDS. CONCRETE FOR PAVING SHALL BE 3600 PSI CONCRETE, MINIMUM 6 SACKS FOR MACHINE FINISH AND MINIMUM 6.5 SACKS FOR HAND FINISH. CONCRETE FOR STRUCTURES, MANHOLES, INLETS, AND CULVERTS SHALL BE 4200 PSI. NO FLY ASH IS ALLOWED IN CONCRETE FOR STRUCTURES.
- 17. COMPACTION WITH A "SHEEP'S FOOT ROLLER" IS REQUIRED.

UTILITY

- I. THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND THERE MAY BE OTHER UNKNOWN UTILITIES EXISTING NOT SHOWN ON THE PLANS THAT SHALL BE VERIFIED AND PROTECTED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. NO EXTRA PAY ITEM.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION OPERATIONS. ANY DAMAGE TO UTILITIES DONE BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE UTILITY OWNER AND THE CITY OF ROCKWALL AT THE ENTIRE EXPENSE OF THE CONTRACTOR.
- 3. THE CONTRACTOR SHALL COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES WITH THE APPLICABLE UTILITY COMPANIES AND/OR AGENCIES, ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED. THE CONTRACTOR SHALL CONTACT THE TEXAS ONE-CALL SYSTEM FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN PUBLIC EASEMENTS OR RIGHT-OF-WAY AT 1-800 545-6005.

ATMOS GAS 800-344-8377
TXU ELECTRIC 972-888-1302
TIME WARNER 972-445-6200
YERIZON COMMUNICATIONS 972-318-5276
AT&T 214-745-8200

- 4. WHEN AN UNLOCATED OR INCORRECTLY LOCATED UNDERGROUND UTILITY OR A BREAK IN A UTILITY IS ENCOUNTERED DURING SITE WORK OPERATIONS, THE CONTRACTOR IS TO NOTIFY THE APPLICABLE UTILITY COMPANY IMMEDIATELY TO OBTAIN PROCEDURE DIRECTIONS. NO EXTRA PAY ITEM.
- 5. THE CONTRACTOR SHALL BE REQUIRED TO ARRANGE TEMPORARY/
 PERMANENT RELOCATION, SUPPORT AND/OR PROTECT ALL POWER,
 ELECTRIC, TELEPHONE, OR LIGHT POLES THAT MAY INTERFERE WITH
 CONSTRUCTION, COORDINATION WITH THE VARIOUS UTILITY COMPANIES
 SHALL BE THE CONTRACTOR'S RESPONSIBILITY, NO EXTRA PAY ITEM.
- 6. CONTRACTOR IS RESPONSIBLE FOR PERSONNEL SAFETY IN PROXIMITY OF OVERHEAD POWER UTILITIES. CONTRACTOR SHALL ARRANGE FOR POLE RELOCATIONS OR DEENERGIZING LINES AS NEEDED. NO EXTRA PAY ITEM.

TRAFFIC CONTROL

- I. THE CONTRACTOR IS RESPONSIBLE FOR PLACEMENT AND MAINTENANCE OF ALL NECESSARY BARRICADES AS REQUIRED BY THE CITY OF ROCKWALL. CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE LATEST TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND LATEST REVISIONS.
- NO STOP OR YIELD SIGN IS TO BE RELOCATED OR REMOVED WITHOUT PRIOR APPROVAL BY THE CITY. THE CONTRACTOR MUST CALL THE CITY DEPARTMENT OF PUBLIC WORKS, AND OBTAIN PERMISSION FOR ANY CHANGES IN THESE SIGNS.
- 3. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON EXISTING ROADS OF THIS PROJECT UNLESS SPECIFIED OTHERWISE IN THE PLANS AND SPECIFICATIONS. THE TRAVELWAY WIDTH SHALL NOT BE LESS THAN 10 FEET.
- ACCESS TO ABUTTING PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT MUST BE MAINTAINED FOR EMERGENCY AND LOCAL TRAFFIC AT ALL TIMES.
- 5. MAINTENACE OF TRAFFIC CONTROL SYSTEM AND TEMPORARY PAVEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR, NO SEPERATE PAY ITEM.

STORM WATER POLLUTION PREVENTION

- I. UNLESS OTHERWISE NOTED, ALL STORM WATER POLLUTION PREVENTION MEASURES SHALL CONFORM TO CITY OF ROCKWALL STANDARDS OR TO APPLICABLE GUIDELINES
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SURFACE DRAINAGE AND EROSION CONTROL FACILITIES ON SITE DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION AT ALL TIMES.
- 4. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLETING ANY APPLICABLE LOCAL, STATE, OR FEDERAL PERMITTING REQUIREMENTS WHICH MAY APPLY, INCLUDING THE SWPPP, NO EXTRA PAY ITEM.
- 5. CONTRACTOR SHALL PROVIDE CONSTRUCTION ENTRANCE/EXITS AT ALL ACCESS POINTS TO THE PROJECT.

APPROVED FOR CONSTRUCTION

MAY 2 6 2009

City of Rockwall Engineering Dept. City Engineer:



NO. REVISION BY DATE

SERVICE CENTER PARKING IMPROVEMENTS

GENERAL CONSTRUCTION NOTES

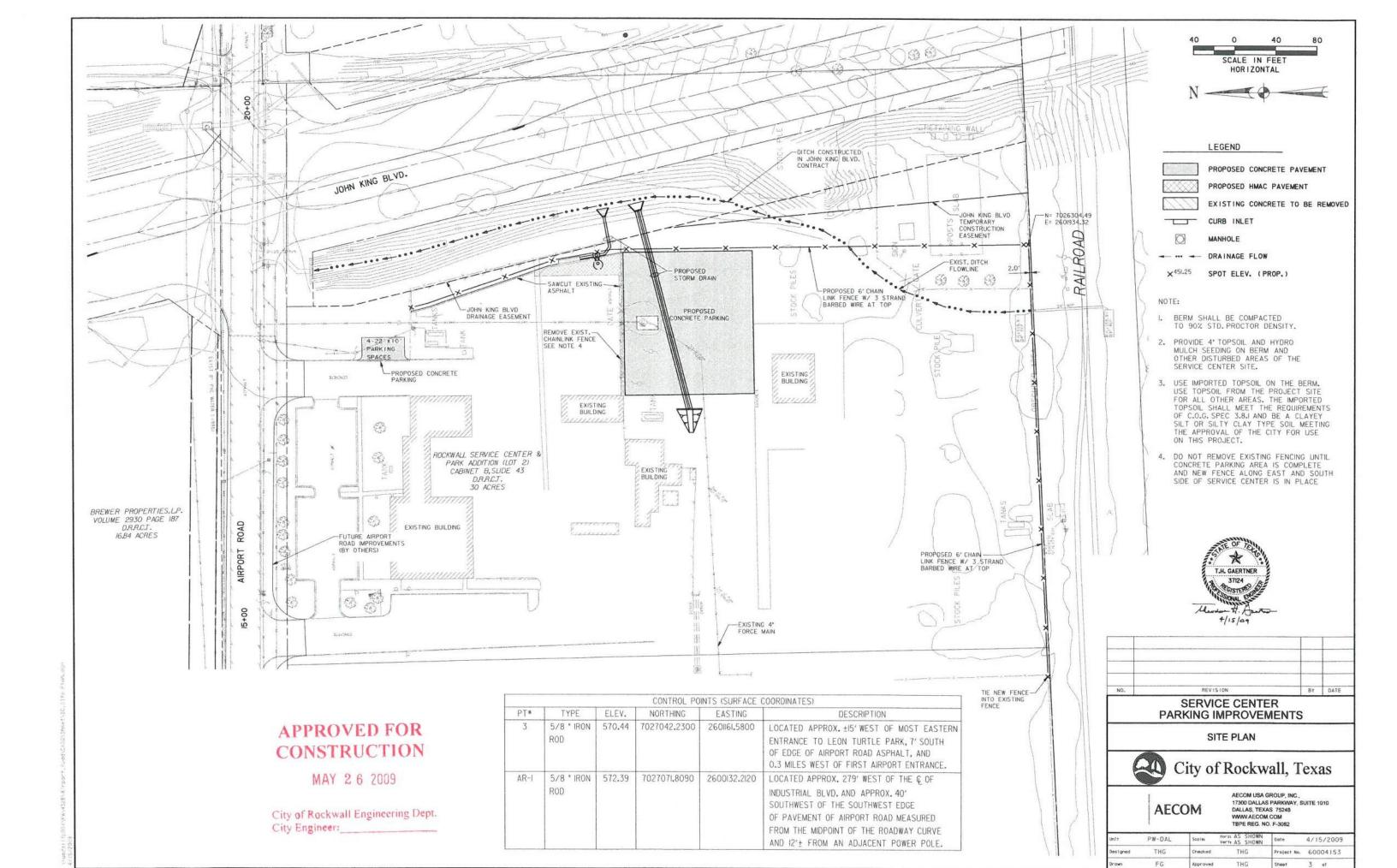


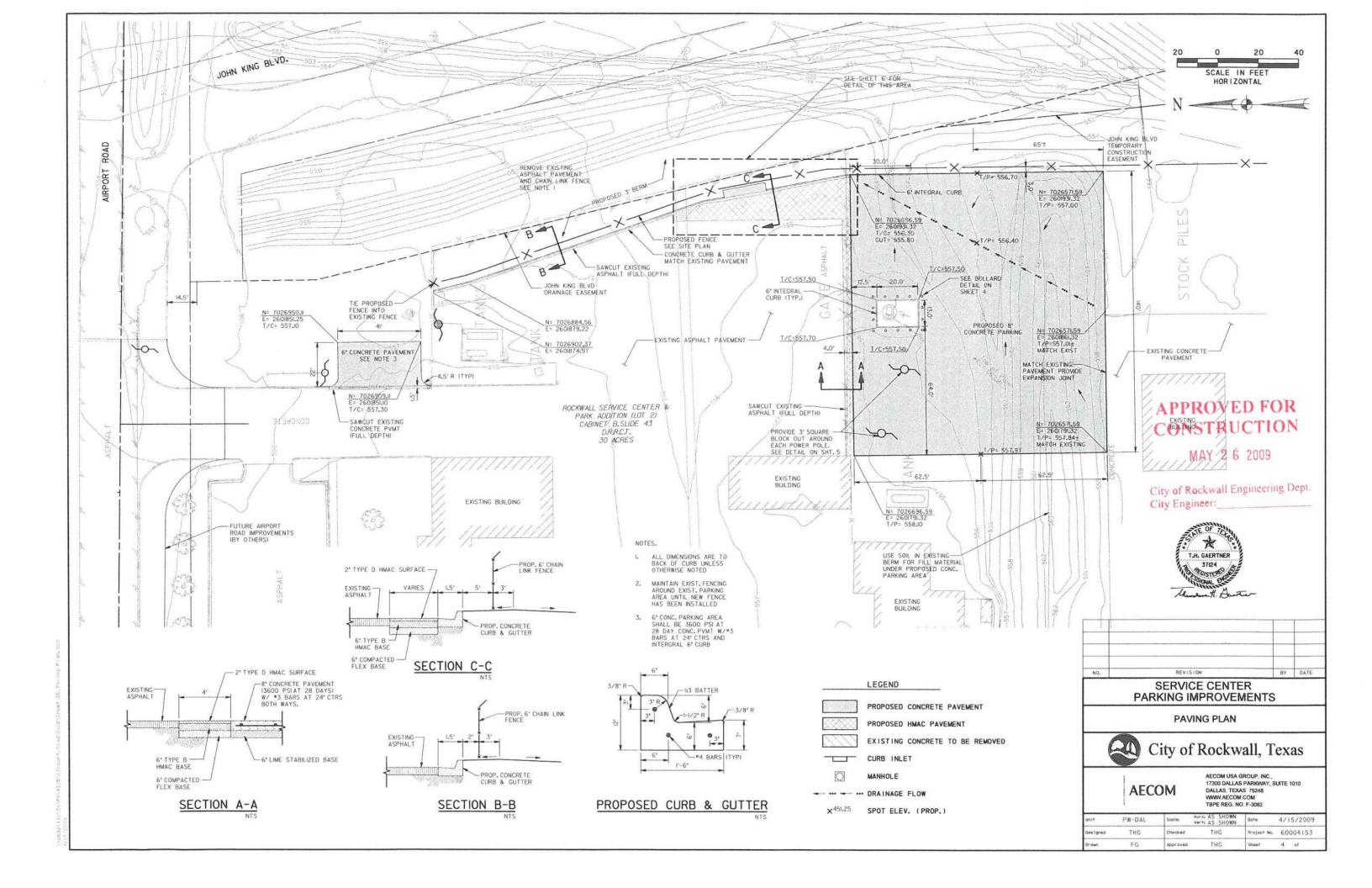
City of Rockwall, Texas

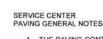
AECOM

AECOM USA GROUP, INC., 17300 DALLAS PARKWAY, SUITE 1010 DALLAS, TEXAS 75248 WWW.AECOM COM TBPE REG. NO. F-3082

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	rown	JJ	Approved	THG	Sheet	2 of				







- 1. THE PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADJUSTMENT OF WATER AND SANITARY SEWER APPURTENCES IN ACCORDICE WITH THE STANDARD DETAILS AND SPECIFICATIONS OF THE CITY OF ROCKWALL
- 2. THE SUBGRADE SHALL BE IN A MOIST CONDITION AT THE TIME CONCRETE IS
- 3. DUMMY JOINTS SHOULD BE FORMED BY ONE OF THE FOLLOWING METHODS: SAWED, HAND-FORMED OR FORMED BY PREMOLDED FILLER. JOINT DEPTH SHOULD BE EQUAL TO ONE-FOURTH (1/4) OF THE SLAB THICKNESS. HAND FORMED JOINTS SHOULD HAVE A MAXIMUM EDGE RADIUS OF ONE-FOURTH FORMED JOINTS SHOULD HAVE A MAXIMUM EDGE RADIUS OF ONE-FOURTH (1/4) INCH. SAWING OF JOINTS SHOULD BEGIN AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT SAWING WITHOUT EXCESSIVE RAVELING. ALL JOINTS SHOULD BE COMPLETED BEFORE UNCONTROLLED SHRIINKAGE CRACKING OCCURS. JOINTS SHOULD BE CONTINUOUS ACROSS THE SLAB UNLESS INTERRUPTED BY FULL-DEPTH PREMOLDED JOINT FILLER AND SHOULD EXTEND COMPLETELY THROUGH THE CURB. ALL JOINT OPENINGS SHALL BE CLEANED AND SEALED BEFORE OPENING PAVED AREA TO TRAFFIC.

JOINT SPACING:

FILL WITH JOINT SEALER TO-1/4" BELOW SURFACE

LOCATE WHERE SHOWN ON PLANS

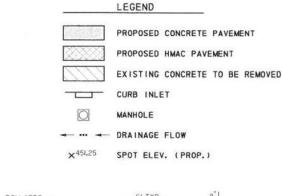
EXPANSION (OR ISOLATION) JOINTS SAWED JOINTS

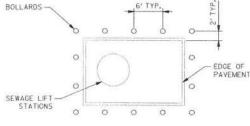
20' (MAX); 12.5' (MIN.) LOCATED AT SAWED JOINTS OR

CONSTRUCTION JOINTS **EXPANSION JOINTS**

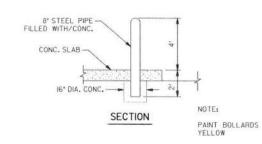
- 4. EXPANSION (OR ISOLATION) JOINTS SHALL BE USED TO ISOLATE FIXED OBJECTS ABUTTING OR WITHIN THE PAVED AREA. THEY SHOULD CONTAIN PREMOLDED JOINT FILLER FOR THE FULL DEPTH OF THE SLAB PER DETAILS.
- 5. ALL CONCRETE SHALL BE CLASS "C" CONCRETE AND HAVE A MIN. COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAYS, AND A MINIMUM OF 4% TO 6% AIR ENTRAINED.
- CONTRACTOR SHALL DISPOSE OF SURPLUS DIRT, DEBRIS, ETC. LEGALLY OFFSITE. ALL WORK AREAS SHALL BE CLEANED UP AT THE COMPLETION OF
- SURFACE FINISHING SHALL BE SKID RESISTANT; A LIQUID CURING COMPOUND SHALL BE UNIFORMLY SPRAYED ON THE CONCRETE IMMEDIATELY AFTER THE FINISHING OPERATION.
- 8. CONTRACTOR SHALL PROVIDE ALL SAFETY DEVICES FOR THE PROTECTION OF THE PUBLIC.
- CONCRETE PAVEMENT AND STRUCTURES SHALL BE BACKFILLED AS SOON AS POSSIBLE AFTER FORMS ARE REMOVED.

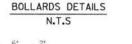
1/8" RADIUS

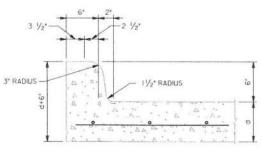




PLAN VIEW









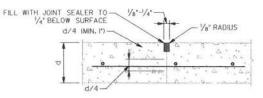


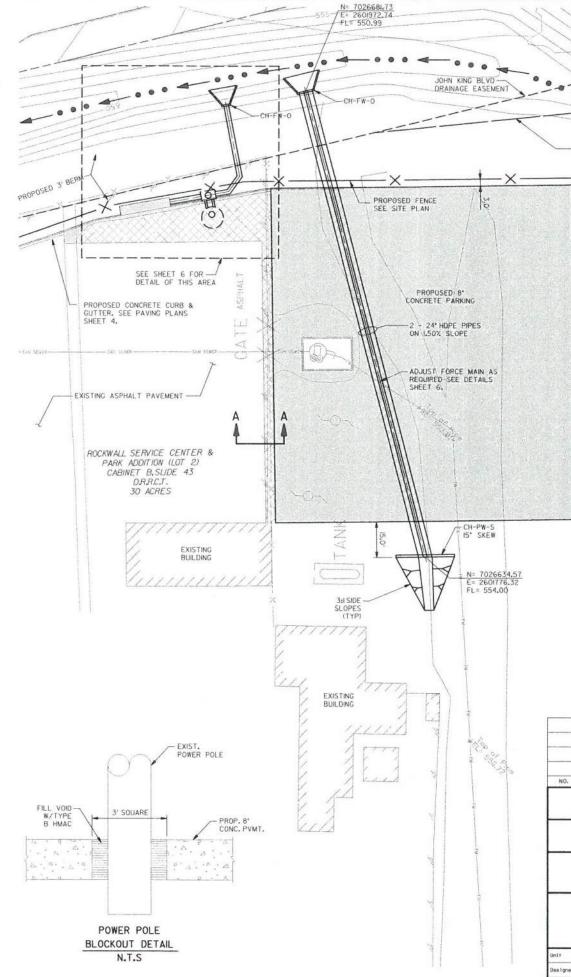
KEYED CONSTRUCTION JOINT

PREFORMED

EXPANSION JOINT

N.T.S





APPROXED FOR CEUSINSTRUCTION MAY 2 6, 2009

EXISTING CONCRETE-

40

SCALE IN FEET

HORIZONTAL

JOHN KING BLVD TEMPORARY CONSTRUCTION EASEMENT

City of Rockwall Engineering Dept. City Engineer:



BY DATE

SERVICE CENTER PARKING IMPROVEMENTS

DRAINAGE PLAN & PAVEMENT DETAILS

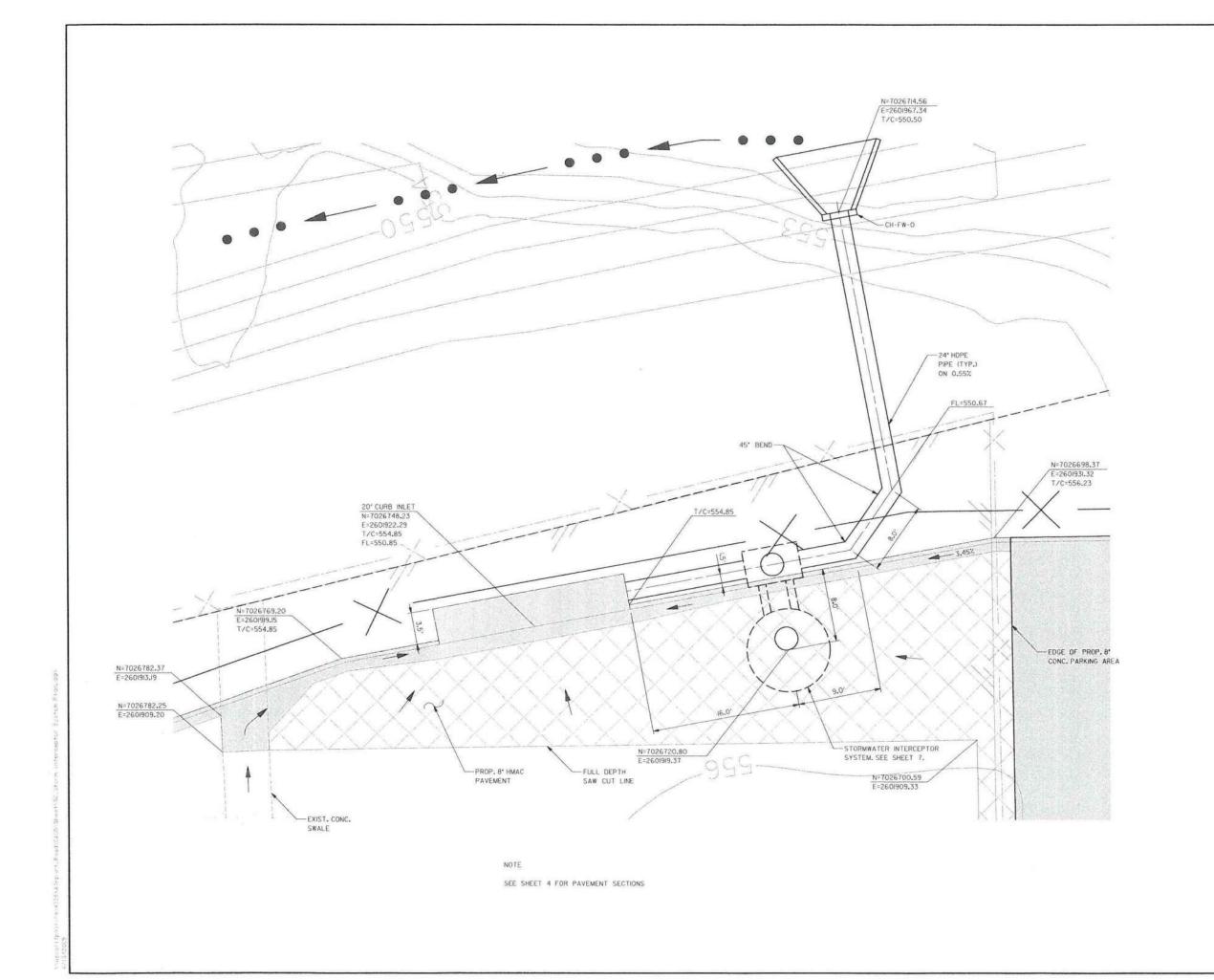


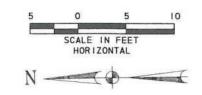
City of Rockwall, Texas

AECOM

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City of Rockwall Engineering Dept.
City Engineer:



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SERVICE CENTER PARKING IMPROVEMENTS

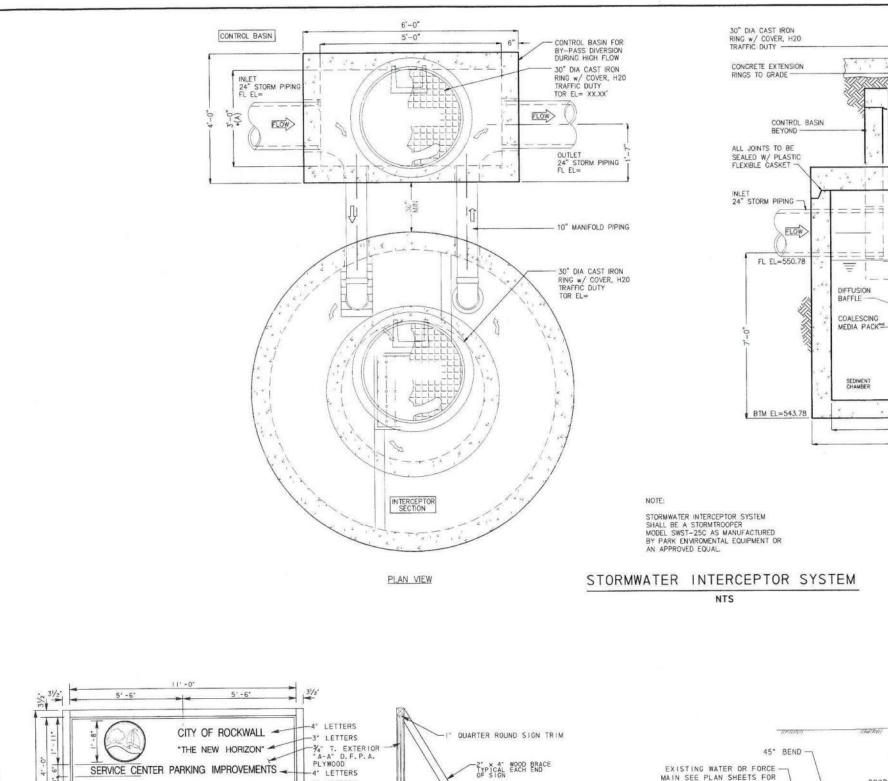
STORMWATER INTERCEPTOR SYSTEM PAVEMENT AND DRAINAGE PLAN



City of Rockwall, Texas

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AECOM USA GROUP, INC., 17300 DALLAS PARKWAY, SUITE 1010 DALLAS, TEXAS 75248 WWW AECOM.COM TBPE REG. NO. F-3082



MAY 2 6 2009

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PARKING IMPROVEMENTS

MISCELLANEOUS DETAILS



City of Rockwall, Texas

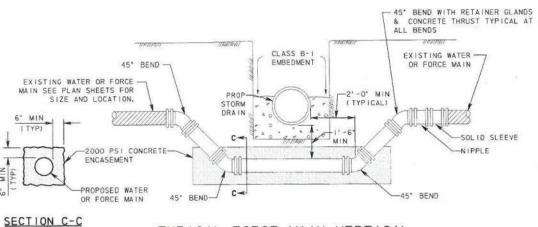
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TOR EL = 555.50 - RIM ON CONTROL BASIN = 555.15 - RIM ON INTERCEPTOR SECTION

INTERCEPTOR SECTION

> -SLUDGE BAFFLE

48" DIA RISER

-

1 ,24

9'-0"

ELEVATION

TOP EL = 553.75 - CONTROL BASIN = 554.15 - INTERCEPTOR SECTION

TOP EL = 552.45

OUTLET

FLOW

L EL=550.75

SIDE ELEVATION TO POS

GRADE

TYPICAL FORCE MAIN VERTICAL ADJUSTMENT/RELOCATION DETAIL

NTS

A. GENERAL SITE DATA

I. PROJECT LIMITS:

CITY OF ROCKWALL SERVICE CENTER

2. PROJECT SITE MAPS:

- * Project Location Map: Title Sheet & Project Layout
- * Drainage Patterns: Drainage Area Maps
- * Approx. Slopes Anticipated After Major Gradings and Areas of Soil Disturbance: Typical Sections
- * Major Controls and Locations of Stabilization Practices: SW3P
- * Project Specific Locations: To be specified by project field office and located in the project SW3P file
- * Surface Waters and Discharge Locations: SW3P Layout

3. PROJECT DESCRIPTION:

SERVICE CENTER PARKING IMPROVEMENTS INCLUDING GRADING IMPROVEMENTS AND ADDITIONAL PAVED PARKING AREAS.

4. MAJOR SOIL DISTURBING ACTIVITIES:

CLEARING AND GRUBBING, GRADING, EXCAVATION AND EMBANKMENT FOR THE PAVED PARKING AREAS, STORM DRAINS, FORCE MAIN AND CULVERTS.

5. EXISTING CONDITION OF SOIL & VEGETATIVE

COVER AND % OF EXISTING VEGETATIVE COVER:

APPROXIMATELY 95% OF THE SITE IS COVERED WITH VARIOUS NATIVE AND IMPROVED GRASS THAT ARE IN GOOD CONDITION.

6. TOTAL PROJECT AREA: 1.10 Acres

7. TOTAL AREA TO BE DISTURBED: 1.10 ACTES (100 % OF TOTAL PROJECT AREA)

8. WEIGHTED RUNOFF COEFFICIENT

BEFORE CONSTRUCTION: AFTER CONSTRUCTION:

9. NAME OF RECEIVING WATERS:

BUFFALO CREEK

10. ENDANGERED SPECIES, DESIGNATED CRITICAL HABITAT AND HISTORIC PROPERTY:

A. No Endangered Species, Designated Critical Habitat or Historic Property has been found on this project site.

B. EROSION AND SEDIMENT CONTROLS

I. SOIL STABILIZATION PRACTICES:

(Select T = Temporary or P = Permanent, as applicable)

TEMPORARY SEEDING	T PRESERVATION OF NATURAL RESOURCES
MULCHING (Hay or Straw)	FLEXIBLE CHANNEL LINER
BUFFER ZONES	RIGID CHANNEL LINER
PLANTING	P SOIL RETENTION BLANKET
P SEEDING	P COMPOST MANUFACTURED TOPSOIL
P SODDING	P OTHER: (Specify Practice)
	FIBER MULCH

2. STRUCTURAL PRACTICES:

(Select T = Temporary or P = Permanent, as applicable)

	SILT FENCES	DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
	HAY BALES	DIVERSION, INTERCEPTOR, OR PERIMETER SWALE
	ROCK FILTER DAMS	DIVERSION DIKE AND SWALE COMBINATIONS
_	PIPE SLOPE DRAINS	T ROCK BEDDING AT CONSTRUCTION EXIT
1000	PAVED FLUMES	TIMBER MATTING AT CONSTRUCTION EXIT
	CHANNEL LINERS	STONE OUTLET STRUCTURES
_	SEDIMENT TRAPS	VELOCITY CONTROL DEVICES
	SEDIMENT BASINS	P CURBS AND GUTTERS
-	SEDIMENT BASINS STORM SEWERS	STORM INLET SEDIMENT TRAP
-	OTHER: BIODEGRADABLE E	EROSION CONTROL LOGS
-	ROCK BERM	
-		
-		
-	—	

3. STORM WATER MANAGEMENT:

I. Storm water drainage will be provided by the existing storm drain system including ditches, inlets and storm watersystems that will carry drainage within the project site to the low points within the parking areas and project site which drain to natural facilities.

2. Other permanent erosion controls include hydraulic design to limit structure outlet velocities and grading design generally consisting of 4:1 or flatter slopes with permanent vegetative cover.

4. STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction)

The order of storm water management activities will be in accordance with the traffic control plan & consistent with SW3P layout.

5. NON-STORM WATER DISCHARGES:

Non-storm water discharges should be filtered or held in retention basins before being allowed to mix with storm water. These discharges consist of non-polluted ground water, spring water, foundation and/or footing drain water; and water used for dust control, pavement washing and vehicle washwater containing no detergents.

APPROVED FOR CONSTRUCTION

MAY 2 6 2009

City of Rockwall Engineering Dept. City Engineer:

C. OTHER REQUIREMENTS & PRACTICES

I. MAINTENANCE:

All erosion and sediment controls shall be maintained in good working order. If a repair is necessary, it shall be performed at the earliest date possible but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. Disturbed areas on which construction activities have ceased temporarily or permanently, shall be stabilized within 14 calendar days unless they are scheduled to and do resume within 21 calendar days. The areas adjacent to creeks and drainageways shall have priority followed by devices protecting storm sewer Inlets.

2. WASTE MATERIALS:

Except as noted below, all waste materials shall be collected in a metal dumpster having a secure cover. The dumpster shall meet all state and local solid waste management regulations. All trash and debris from construction shall be deposited in the dumpster. The dumpster shall be emptied, as necessary or as required by local regulation, and hauled to a local approved land fill site. The burying of construction waste on the project site shall not be permitted.

Concrete washout areas shall be required and shall consist of a pit, lined with an impervious material, of sufficient size to contain, until evaporation, all water used and washout material produced during concrete washout operations. The concrete washout locations shall be as directed by the engineer.

Lime slaking tanks shall be surrounded by a earthen berm, capable of containing any overflow.

3. HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

As a minimum any products in the following categories are considered to be hazardous: paints, acids, solvents, asphalt products, chemical additives for soil staibilization and concrete curing compounds or additivities, in the event of a spill which may be hazardous, the spill coordinator shall be contacted immediately.

4. SANITARY WASTE:

All sanitary waste shall be collected from the portable units, as necessary or as required by local regulation, by a licensed sanitary waste management contractor.

5. OFFSITE VEHICLE TRACKING:

The Contractor shall be required, on a regular basis or as may be directed by the Engineer, to dampen haul roads for dust control, stabilize construction entrances and to remove excess dirt from the roadway.

6. MANAGEMENT PRACTICES:

I. Disposal areas, stockpiles and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed.

2.Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants.

3. All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, plling, debris or other obstructions placed during construction operations that are not a part of the finished work.

7. OTHER:

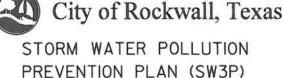
I.Listing of construction materials stored on site to be provided by Project Field Office.

2. The Project SW3P File located at the project field office shall contain the N.O.I., CGP Coverage Notice,TCEQ TPDES Form, Signature Authorization, Certification/Qualification Statements, Inspection Reports, Required Maps, and a copy of the TPDES General Permit No.TXRI50000.

3. Prepare SW3P in accordance with special conditions (SC) SC.42, as shown in the contract documents.

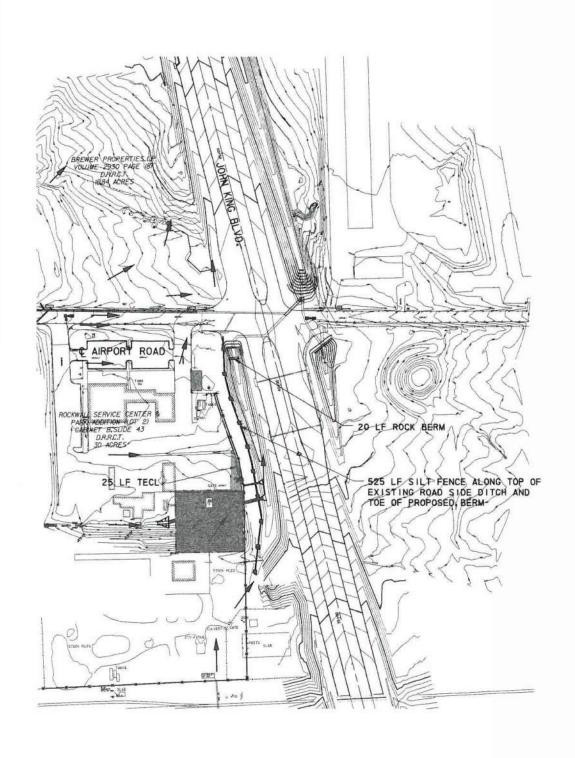


AECOM LISA GROUP INC. 17300 DALLAS PARKWAY, SUITE 1010 DALLAS, TEXAS 75248 **AECOM**



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9/02				
VISIONS	STATE	DISTRICT	COUNTY	SHEET NO.
	CONTROL	SECTION	JOB	8

There H. Davie . P.E. 4/15/49







MAY 2 6. 2009

City of Rockwall Engineering Dept. City Engineer:



_			
			-
NO.	REVISION	BY	DATE

SERVICE CENTER PARKING IMPROVEMENTS

STORM WATER POLLUTION PREVENTION PLAN LAYOUT



City of Rockwall, Texas

AECOM

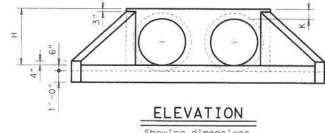
AECOM USA GROUP, INC., 17300 DALLAS PARKWAY, SUITE 1010 DALLAS, TEXAS 75248 WWW.AECOM.COM TBPE REG. NO. F-3082

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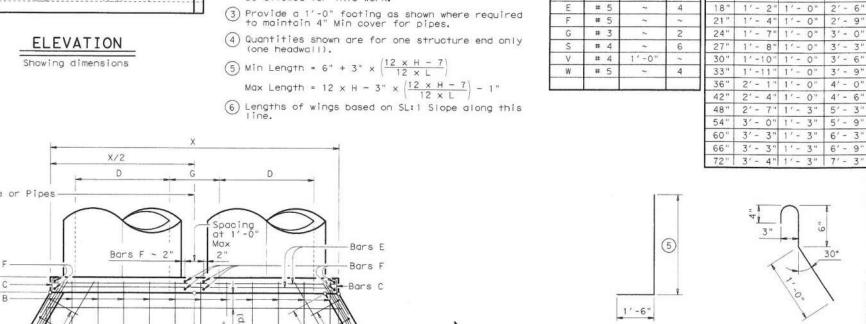
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TXD01 for any purpose whatsoever. TXD01 assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

ı,	IA OF	1	Values	for one P	ipe			for each o	be a	dded
SLOPE	DIA	w	×	Y	L	Reinf (Lbs)	(CY)	X and W	Reinf (Lbs)	Cond
	12"	4' - 7 1/2"	2'- 6"	2'-10"	3' - 3 1/4"	84	0.6	1'- 9"	20	0.2
	15"	5' - 5 3/4"	2'- 9 1/2"	3' - 4"	3'-10 1/4"	99	0.7	2' - 2"	24	0. 3
	18"	6' - 4 1/4"	3' - 1"	3'-10"	4' - 5"	120	0.9	2' - 8"	32	0.3
	21"	7' - 2 3/4"	3' - 4 1/2"	4' - 4"	5'-0"	137	1.1	3' - 1"	43	0.4
	24"	8' - 2 1/2"	3'- 9 1/2"	4'-10"	5' - 7"	158	1.3	3' - 7"	50	0.5
1	27"	9' - 1"	4' - 1"	5' - 4"	6' - 2"	173	1.5	3'-11"	56	0.6
	30"	9'-11 1/2"	4' - 4 1/2"	5'-10"	6' - 8 3/4"	197	1.7	4' - 4"	65	0.8
	33"	10'-10"	4' - 8"	6' - 4"	7'- 3 3/4"	216	2.0	4' - 8"	71	0.9
	36"	11'- 8 1/4"	4'-11 1/2"	6'-10"	7'-10 3/4"	241	2.2	5' - 1"	81	1.0
	42"	13' - 5 1/4"	5'- 6 1/2"	7'-10"	9'-01/2"	290	2.8	5'-10"	97	1. 3
	48"	15'- 9"	6'- 1 1/2"	9' - 4"	10' - 9 1/4"	350	3.8	6' - 7"	117	1.
	54"	17' - 5 3/4"	6' - 8 1/2"	10' - 4"	11'-11 1/4"	415	4.5	7'- 6"	151	2.
	60"	19' - 2 3/4"	7'- 3 1/2"	11'- 4"	13' - 1"	469	5.3	8'- 3"	174	2.5
	66"	20'-11 1/2"	7'-10 1/2"	12' - 4"	14' - 3"	530	6.2	8'- 9"	194	2.9
	72"	22' - 8 1/2"	8' - 5 1/2"	13' - 4"	15' - 4 3/4"	587	7.1	9' - 4"	213	3.3
	12"	6' - 3"	2' - 6"	4'- 3"	4'-11"	114	0.8	1'- 9"	22	0.2
8	15"	7' - 5"	2'- 9 1/2"	5'- 0"	5'- 9 1/4"	133	1.1	2' - 2"	28	0.3
	18"	8' - 6 3/4"	3' - 1"	5' - 9"	6' - 7 3/4"	166	1.3	2' - 8"	37	0.5
	21"	9' - 8 3/4"	3' - 4 1/2"	6'- 6"	7' - 6"	189	1.6	3' - 1"	48	0.6
	24"	11'-0"	3'- 9 1/2"	7' - 3"	8' - 4 1/2"	221	2.0	3' - 7"	58	0.7
	27"	12' - 2"	4' - 1"	8'-0"	9' - 2 3/4"	245	2.3	3'-11"	67	0.8
	30"	13' - 4"	4' - 4 1/2"	8'- 9"	10'-1 1/4"	287	2.7	4' - 4"	77	1.0
3:1	33"	14' - 5 3/4"	4' - 8"	9'- 6"		310	3.1			-
	36"	15' - 7 3/4"	4'-11 1/2"	10' - 3"	10'-11 3/4"	343	3.5	4' - 8" 5' - 1"	96	1.2
	42"	17'-11 1/2"	5'- 6 1/2"	11'- 9"	13' - 6 3/4"	424	4.5	5'-10"		-
	48"		6' - 1 1/2"	14' - 0"					119	1.7
	54"	21' - 1 1/4"	6' - 8 1/2"	15' - 6"	16' - 2"	527 618	6.1	6' - 7" 7' - 6"	146	2.3
	60"	25' - 9 1/4"	7' - 3 1/2"	17' - 0"	19' - 7 1/2"	707	7.3	7' - 6" 8' - 3"	186	2.9
	66"	28' - 1"	7'-10 1/2"	18'- 6"	21' - 4 1/4"	797	10.1	8'-9"	242	3.4
	72"	30' - 4 3/4"	8' - 5 1/2"	20' - 0"	23' - 1 1/4"	910	11.7	9' - 4"	272	
	12"	7'-10 3/4"	2'- 6"	5' - 8"		144		1'- 9"	24	4.4
	15"	9' - 4"	2'- 9 1/2"	6'-8"	7' - 8 1/2"	177	1.1		32	0.3
	18"	10' - 9 1/2"	3' - 1"	7' - 8"			1.5		-	0.4
	_		3' - 4 1/2"		10' - 0"	217	1.9	2' - 8"	42	0.5
	21"			8' - 8" 9' - 8"		254	2.3	3' - 1"	57	0.7
	24"	7.5	3'- 9 1/2"			295	2.8	3' - 7"	67	0.9
	27"	15' - 3"		10' - 8"	12' - 3 3/4"	328	3.3	3'-11"	77	1.0
4:1	30"	16' - 8 1/4"	4' - 4 1/2"	11'- 8"	13' - 5 3/4"	379	3.8	4' - 4"	89	1.3
ŕ	33"	18' - 1 3/4"	4' - 8"	12'- 8"	14' - 7 1/2"	417	4.5	4'-8"	101	1.4
	36"	19' - 7"	4'-11 1/2"	13'- 8"	15'- 9 1/4"	464	5.1	5'-1"	115	1.7
	42"	22' - 5 3/4"	0 72	15' - 8"	18' - 1"	575	6.5	5'-10"	141	2.1
	48"		6'-1 1/2"	18'- 8"	21'- 6 1/4"		8.9	6' - 7"	175	2.8
	54"		6' - 8 1/2"	20' - 8"	23'-10 1/4"		10.7	7'- 6"	226	3.6
	60"	32' - 3 3/4"		22' - 8"	26' - 2"		12.7	8' - 3"	264	4.3
	66"	35' - 2 1/2"		24' - 8"	28' - 5 ¾ " 30' - 9 ½ "	The second second	14.9	8'- 9"	300	4. 9
_	72"	38' - 1 1/4"		26' - 8"	7.6		17.3	9' - 4"	334	5.6
	12"	11' - 2"		8' - 6"	9'-93/4"	220	1.9	1'- 9"	28	0.4
	15"		2'-91/2"	10' - 0"	11'- 6 1/2"	264	2.5	2' - 2"	37	0.5
	18"	15' - 2 1/2"	3/32	11' - 6"	13'- 3 1/4"	326	3.2	2'- 8"	50	0.
	21"	17' - 2 3/4"	3' - 4 1/2"	13' - 0"	15' - 0 1/4"	381	3.9	3' - 1"	69	0.9
	24"	19' - 4 1/2"		14' - 6"	16' - 9"	447	4.8	3' - 7"	80	1.2
	27"	21' - 4 3/4"	4' - 1"		18'- 5 3/4"	506	5.7	3'-11"	96	1.4
5	30"	23' - 5 1/4"		17' - 6"	20' - 2 1/2"	587	6.7	4' - 4"	110	1.
	33"	25' - 5 1/2"	4' - 8"	19'- 0"	21'-11 1/4"	667	7.8	4' - 8"	127	2. (
	36"	27' - 5 3/4"	4'-11 1/2"	20' - 6"	23' - 8"	727	9.0	5'-1"	144	2.3
	42"	31' - 6 1/4"		23' - 6"	27' - 1 1/2"		11.5	5'-10"	179	3.0
	48"	37' - 3 1/2"	6'-1 1/2"	28' - 0"	32' - 4"		15.9	6' - 7"	231	4.0
	54"	41' - 4 1/4"	6' - 8 1/2"	31'- 0"	35'- 9 1/2"		19.2	7'- 6"	300	5.0
	60"	45' - 4 3/4"	7'- 3 1/2"	34' - 0"	39' - 3"	1610	22.9	8'- 3"	353	6.0

TABLE OF VARIABLE DIMENSIONS



- ① Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- 2) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- \bigodot Provide a 1'-0" footing as shown where required to maintain 4" Min cover for pipes.



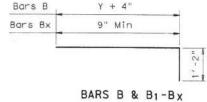


TABLE OF 4 TABLE OF REINFORCING STEEL CONSTANT DIMENSIONS

DIA

12"

15"

9" 1'- 0" 2'- 0'

11" 1'- 0" 2'- 3'

BARS C (2'-0" long)

No.

Bar

В

Size

3

4

3

5

5

Spa

1'-0"

1'-6"

1'-0"

1'-0"

BARS V

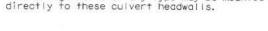
GENERAL NOTES:

Designed according to current AASHTO
Standard and Interim Specifications,
Reinforcing steel shall be placed with
the center of the outside layer of bars 2" from the surface of the concrete.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" and shall

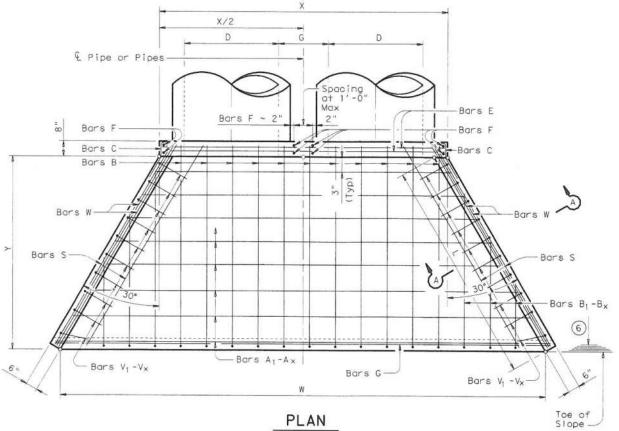
have a minimum compressive strength of 3600 psi. No bridge rails of any type may be mounted

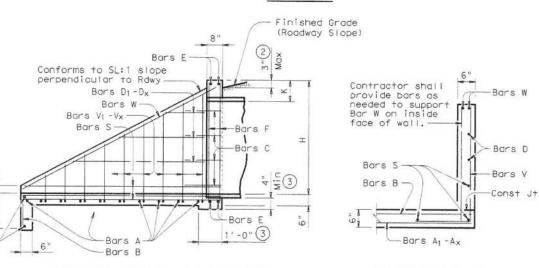




CH-FW-0

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© TxDOT May 2005	DISTRICT	FEDERAL	AID PRO	JECT	-	SHEET
REVISIONS			10			
	COU	NTY	CONTROL	SECT	50L	HIGHWAY





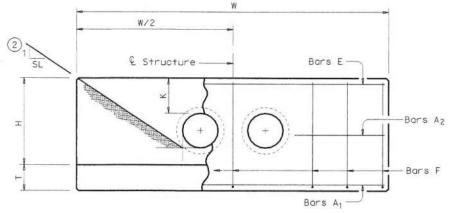
TYPICAL WING ELEVATION

SECTION A-A

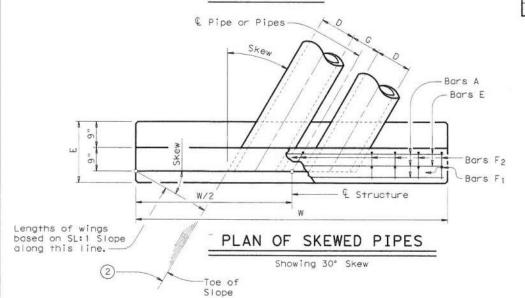
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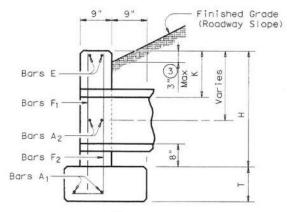
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7	1 -	PI	W	(Lbs)		W	(Lbs)		W	Reinf (Lbs)	(CY)	W	Reinf (Lbs)		W	(Lbs)		W	(Lbs)	
	t	12"	9'- 4"	124	1.1	1'- 9 3/4"	15	0.2	10' - 5"	130	1.2	2'-0"	16	0.2	12' - 9"	159	1.5	2' - 5 3/4"	17	10
		15"	10' - 7"	136	1.3	2' - 3"	17	0.2	11'-10"	159	1.5	2' - 6"	18	0.2	14' - 6"	191	1.8		20	1
	1	18"	11'-11"	165	1.5	2'- 9"	19	0.3	13' - 3"	174	1.7	3'-1"	29	0.3	16' - 3"	207	2.1	3'- 9 1/4"	33	1
		21"	13' - 2"	203	1.9	3' - 2 1/4"	31	0.4	14'- 9"	233	2.1	3'- 6 3/4"	33	0.4	18' - 0"	276	2.6		36	t
		24"	14' - 6"	240	2.1	3' - 8 1/4"	34	0.4	16' - 2"	251	2.4	4' - 1 3/4"	36	0.5	19'-10"	318	2.9		39	t
		27"	15'- 9"	258	2.5	4'- 0 3/4"	38	0.5	17' - 7"	292	2.8	4'- 6 1/4"	39	0.6	21' - 7"	342	3.4		44	t
	18	30"	17' - 1"	297	2.8	4' - 5 3/4"	40	0.6	19' - 1"	311	3.1	5'- 0"	42	0.6	23' - 4"	388	3.8		47	t
	Г	33"	18' - 5"	320	3.3	4' - 9 3/4"	43	0.6	20' - 6"	358	3.6	5' - 4 3/4"	46	0.7	25' - 1"	439	4.4	6' - 7 1/4"	51	T
	Г	36"	19' - 8"	401	4.0	5' - 3"	47	0.9	21'-11"	422	4.5	5'-10 3/4"	50	0.9	26'-10"	517	5.5	7' - 2 1/4"	55	Ť
		42"	22' - 3"	476	5.0	6'-03/4"	53	1.1	24'-10"	528	5.6	6'-8 3/4"	56	1.2	30' - 5"	634	6.9	8' - 3'	76	Ť
		48"	25'-11"	577	6.6	6'- 9 3/4"	60	1.3	28'-10"	637	7.3	7'- 7 1/4"	79	1.5	35' - 4"	791	9.0	9'- 3 3/4"	88	T
	Г	54"	28' - 6"	711	7.8	7'- 9"	83	1.6	31'- 9"	781	8.7	8'- 8"	87	1.8	38'-11"	958	10.7	10' - 7 1/4"	97	T
		60"	31'- 1"	805	9.2	8' - 6 1/4"	91	1.9	34' - 8"	881	10.2	9'- 6 1/4"	97	2.1	42' - 5"	1113	12.5	11'- 8'	124	T
		66"	33' - 8"	907	10.6	9'-03/4"	98	2.1	37' - 6"	1028	11.8	10'- 1 1/4"	102	2.4	46' - 0"	1235	14.5	12' - 4 1/4"	132	T
		72"	36' - 3"	1071	12.1	9' - 8"	105	2.4	40' - 5"	1207	13.5	10'- 9 1/4"	110	2.6	49' - 6"	1446	16.6	13' - 2 1/4"	141	T
i	L	12"	13' - 6"	178	1.6	1'- 9 3/4"	15	0.2	15' - 0"	189	1.8	2'- 0"	15	0.2	18' - 5"	237	2.2	2'-5 3/4"	17	T
		15"	15' - 3"	212	1.9	2' - 3"	17	0.2	17' - 0"	223	2.1	2' - 6"	17	0.3	20'-10"	276	2.6	3'-03/4"	20	T
		18"	17' - 1"	231	2.3	2'- 9"	19	0.3	19' - 1"	259	2.5	3' - 1"	29	0.3	23' - 4"	318	3.1	3'- 9 1/4"	32	T
		21"	18'-11"	306	2.7	3' - 2 1/4"	31	0.4	21' - 1"	339	3.0	3' - 6 3/4"	33	0.4	25'-10"	413	3.7	4' - 4 1/4"	36	T
		24"	20' - 8"	345	3.1	3' - 8 3/4"	35	0.4	23' - 1"	384	3.5	4'- 1 3/4"	36	0.5	28' - 3"	462	4.2	5'-0 3/4"	40	T
	13	27"	22' - 6"	376	3.7	4'- 0 3/4"	38	0.5	25' - 1"	438	4.1	4'- 6 1/4"	39	0.6	30' - 9"	522	5.0	5'- 6 1/4"	44	T
		30"	24' - 4"	422	4.1	4'-5 3/4"	40	0.6	27' - 2"	466	4.6	5'- 0"	42	0.6	33' - 3"	578	5.6	6' - 1 3/4"	47	T
		33"	26' - 2"	476	4.8	4'-10"	43	0.6	29' - 2"	522	5.3	5' - 4 3/4"	46	0.7	35' - 9"	644	6.5	6' - 7 1/4"	51	Ť
•		36"	27'-11"	590	5.9	5' - 3 1/4"	47	0.8	31' - 2"	645	6.6	5'-10 3/4"	50	0.9	38' - 2"	787	8.0	7'- 2 1/4"	56	T
		42"	31' - 7"	684	7.3	6'-01/4"	53	1.1	35' - 3"	776	8.2	6' - 8 3/4"	56	1.2	43' - 2"	933	10.0	8' - 3'	79	T
		48"	36' - 9"	880	9.6	6'- 9 3/4"	61	1.3	41'- 0"	953	10.7	7'- 7 1/4"	81	1.5	50' - 2"	1166	13.1	9' - 3 3/4"	88	T
		54"	40' - 5"	1065	11.4	7'- 9"	85	1.6	45' - 0"	1185	12.7	8'- 8"	89	1.8	55' - 2"	1435	15.5	10'- 7 1/4"	97	T
		60"	44' - 0"	1224	13.3	8' - 6 1/4"	93	1.9	49' - 1"	1356	14.8	9'- 6 1/4"	96	2.1	60' - 1"	1627	18.2	11' - 8"	124	T
		66"	47' - 7"	1357	15.4	9' - 1"	98	2.1	53' - 1"	1497	17.2	10'- 1 1/4"	103	2.3	65' - 1"	1834	21.1	12' - 4 1/4"	130	I
		72"	51' - 3"	1624	17.7	9'-8"	105	2.3	57' - 2"	1787	19.7	10'- 9 1/4"	109	2,6	70' - 0"	2210	24.1	13'- 2 1/4"	139	
		12"	17' - 7"	232	2.1	1'- 9 3/4"	15	0.2	19' - 8"	259	2.4	2'- 0"	16	0.2	24' - 0"	314	2.9	-	18	
	-	15"	19'-11"	272	2.5	2' - 3"	17	0.2	22' - 3"	301	2.8	2' - 6"	18	0.3	27' - 3"	361	3.5	3'-03/4"	21	
	L	18"	22' - 3"	313	3.0	2' - 9"	19	0.3	24'-10"	344	3.3	3' - 1"	29	0.3	30' - 5"	427	4.0	3'- 9 1/4"	32	1
	L	21"	24' - 7"	407	3.6	3' - 2 1/4"	31	0.4	27' - 5"	446	4.0	3'-63/4"	33	0.4	33' - 7"	549	4.9	4' - 4 1/4"	36	1
	L	24"	26'-11"	455	4.1	3'-8 3/4"	35	0.4	30' - 0"	499	4.5	4'-1 3/4"	36	0.5	36' - 9"	609	5.6	5'- 0 3/4"	40	1
		27"	29' - 3"	514	4.8	4'-03/4"	38	0.5	32' - 7"	562	5.4	4' - 6 1/4"	40	0.6	39'-11"	703	6.6	5' - 6 1/4"	43	
	L	30"	31' - 7"	568	5.4	4'-5 3/4"	40	0.6	35'- 3"	620	6.0	5'-0"	42	0.6	43' - 2"	768	7.4	6'-1 3/4"	49	1
ř	L	33"	33'-11"	634	6.2	4'-10"	43	0.7	37'-10"	710	7.0	5' - 4 3/4"	46	0.7	46' - 4"	848	8.5	6' - 7 /4"	52	1
	L	36"	36' - 3"	776	7.7	5' - 3"	48	0.9	40' - 5"	868	8.6	5'-10 3/4"	49	0.9	49' - 6"	1058	10.6	7' - 2 1/4"	56	ļ
	1	42"	40'-11"	-		6'-0 1/4"		-		-	-	6' - 8 3/4"	57	1.2					-	-
	-	48"	47' - 7"			6'-10"	-		53' - 1"		-	7' - 7 1/4"	80	1.5		-	-	9'-3 3/4"	86	+
	-	54"	52' - 3"		-	7'-91/4"	86	1.6		1589		8'-8"	89	1.8	71' - 5"		-	10'- 7 1/4"	95	1
	-	60"	56'-11"		17.5		92	_	63' - 6"			9'- 6 1/4"	95	2.1	77' - 9"		23.9		-	1
	-	66"	61' - 7"			9'-03/4"	97	2.1		2011	-	10'- 1 1/4"	101	2.4	84' - 2"			12' - 4 1/4"	131	+
_	-	72"	66' - 3" 25' -11"	2142			104	2.4		2371		10' - 9 1/4"	108	2.6	90' - 6"			13' - 2 1/4"	138	+
	_	15"	29' - 3"	342 390	-	2' - 3"	15		28'-10"	374	3.5	2' - 0"	16	0.2		456	4.3		17	+
	-	_	32' - 7"	459			20		32' - 7" 36' - 4"	442	4.2	2' - 6"	18	0.2	39'-11"	549	5.1	3'-034"	20	+
	-	18"	36' - 0"	608		3'-21/4"	31		40' - 2"	515 660		3'- 6 3/4"	29	0.3	44' - 7"	629	-		33	+
	-	24"	39' - 4"	672			35	0.4		748	6.7	4'-1 3/4"	33 36	0.4	49' - 2" 53' - 9"	823	7.2 8.2		38	+
	-	27"	42' - 8"	770	-		38		47' - 8"	852	8.0	4'-6 1/4"	41	0.5	58' - 4"	920	9.7		42	-
	-	30"	46' - 1"	839			40	0.6		949	8.9	5'-0"	44	0.6	62'-11"		10.9		48	-
	+	33"	49' - 5"	947	-		45	0.7		-	10.3	4.	48	0.7	67' - 6"	1284			50	+
o	-	36"	52'-10"		-			0.8		1287		5'-10 3/4"	51	1.0	72' - 1"	_	15.6	-		+
	-	42"	59' - 6"	1365	-		55	1.0		1522		6'-8 3/4"	57	1.2	81' - 4"	-	19.4	The second secon	55 76	+
	-	48"	69' - 4"						77' - 4"	1934	_	7' - 7 1/4"	79	1.5	94' - 9"	-			86	+
	-	54"	76' - 1"	-	22.0		83	1.6			24.6	8'-8"		1.8	103'-11"			10' - 7 1/4"	95	+-
	-	60"	82'-10"	_	25.8		90	1.9				9'- 6 1/4"	94	2.1	113'-2"	_	35.3			+
		66"	89' - 7"		29.9		96	2.1	99'-11"	-		10' - 1 1/4"	101	2.4	122'-4"	-		12'- 4 1/4"		+
	-	72"	96' - 3"	_	34.2		-					10'- 9 1/4"	108		131'-6"			13' - 2 1/4"	130	+

TABLE OF VARIABLE DIMENSIONS



ELEVATION



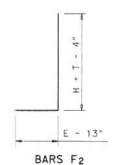


SECTION

- ① Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- ② Indicated slope is perpendicular to centerline Pipe or Pipes.
- 3) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 4 Quantities shown are for one structure end only (one headwall).

TABLE OF CONSTANT DIMENSIONS									
DIA OF PIPE, D	G	К	Н	Т	E				
12"	9"	1'- 0"	2'- 8"	9"	1'- 9"				
15"	11"	1'- 0"	2'-11"	9"	1'- 9"				
18"	1'- 2"	1'- 0"	3' - 2"	9"	1'- 9"				
21"	1'- 4"	1'-0"	3' - 5"	9"	2'- 0"				
24"	1'- 7"	1'- 0"	3' - 8"	9"	2'- 0"				
27"	1'- 8"	1'-0"	3'-11"	9"	2' - 3"				
30"	1'-10"	1'- 0"	4' - 2"	9"	2'- 3"				
33"	1'-11"	1'- 0"	4' - 5"	9"	2'- 6"				
36"	2'- 1"	1'- 0"	4' - 8"	1'- 0"	2' - 6"				
42"	2' - 4"	1'- 0"	5' - 2"	1'- 0"	2' - 9"				
48"	2' - 7"	1'- 3"	5'-11"	1'- 0"	3' - 0"				
54"	3'- 0"	1'- 3"	6' - 5"	1'-0"	3' - 3"				
60"	3'- 3"	1'- 3"	6'-11"	1'- 0"	3' - 6"				
66"	3' - 3"	1'- 3"	7' - 5"	1'- 0"	3' - 9"				
72"	3' - 4"	1'- 3"	7'-11"	1'- 0"	4' - 0"				

REIN	TABL NFORC	E OF ING ST	reel	
Bar	Size	Spa	No.	
A1	# 5	~	2	
A2	# 5	1'-6"	~	
E	# 5	~	2	
F	# 5	1 ' -0"	~	



GENERAL NOTES:

GENERAL NOTES:

Designed according to current AASHTO
Standard and Interim Specifications.

Reinforcing steel shall be placed with
the center of the outside layer of bars 2"
from the surface of the concrete.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" and shall
have a minimum compressive strength of
3600 psi.

3600 psi.

No bridge rails of any type may be mounted directly to these culvert headwalls.



Texas Department of Transportation Bridge Division

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR SKEWED PIPE CULVERTS

CH-PW-S

FILE: chpwsste.dgn	DN: TXDOT	CK: TxDOT	DW: T	TOOK	CK4	GAF	
© Tx00T May 2005	DISTRICT	FEDERAL AID PROJECT				SHEET	
REVISIONS						11	
	COUNTY		CONTROL	SECT	JOB	HIGHWAY	

MAY 2 6 2009

City of Rockwall Engineering Dept. City Engineer:____

